



THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

EDITED BY

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FELLOW OF THE PHILADELPHIA COLLEGE OF PHYSICIANS; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION; OF THE AMERICAN PHILOSOPHICAL SOCIETY; OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA; ASSOCIATE FELLOW OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES,
&c. &c. &c.

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TO READERS AND CORRESPONDENTS.

All articles intended for the original department of this Journal, must be communicated to it *exclusively*. The simultaneous transmission of the same article to several journals, would seem to be indicative of the spirit of advertising rather than of a desire to advance our science, and places the editor in a false position, leading to the suspicion that he presents to his readers, as original, articles which cannot be strictly so considered.

The following works have been received:—

Transactions of the Obstetrical Society of London. Vol. V., for the year 1863. With a list of Officers, Fellows, &c. London: Longman & Co., 1864. (From the Society.)

On Diseases of the Throat and Windpipe, as reflected by the Laryngoscope: a complete manual upon their diagnosis and treatment. Embellished with 116 engravings. By GEORGE DUNCAN GIBB, M. D., M. A., M. R. C. P., &c. Second edition. London: John Churchill & Sons, 1864. (From the Author.)

The Laryngoscope: illustrations of its Practical application, and description of its Mechanism. By GEORGE DUNCAN GIBB, M. D., M. A., M. R. C. P., &c., &c. Illustrated with 35 wood engravings. London: John Churchill & Sons, 1863. (From the Author.)

The Principles of Surgery; Clinical, Medical, and Operative. An original Analysis of Pathology systematically conducted, and a critical exposition of its guidance, at the bedside and in operations. Representing the Principles of the earliest and most exact Diagnosis, Etiology, Prognosis, and Therapeutics, Medical and Operative. By FREDERICK JAMES GANT, F. R. C. S., Surgeon and Pathological Anatomist to the Royal Free Hospital, &c. &c. London: John Churchill & Sons, 1864. (From the Author.)

The Principles and Practice of Obstetrics. Illustrated with 159 Lithographic figures from original Photographs, and with numerous woodcuts. By HUGH L. HODGE, M. D., Emeritus Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania, &c. &c. &c. Philadelphia: Blanchard & Lea, 1864. (From the Publishers.)

The Pathology and Treatment of Venereal Diseases: including the results of recent investigations upon the subject. By FREEMAN J. BUMSTEAD, M. D., Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York, &c. &c. A new and revised edition. With illustrations. Philadelphia: Blanchard & Lea, 1864.

Smithsonian Contributions to Knowledge. The Gray Substance of the Medulla Oblongata and Trapeziun. By JOHN DEAN, M. D., Washington City. Published by the Smithsonian Institution, Feb. 1864. (From the Author.)

Photographs of the Gray Substance of the Medulla Oblongata and Trapeziun. By JOHN DEAN, M. D. (From the Author.)

Medical Diagnosis with special reference to Practical Medicine. A guide to the knowledge and discrimination of diseases. By J. M. DA COSTA, M. D., Lecturer on Clinical Med. and Phys. to the Philadelphia Hospital, &c. Illustrated with engravings on wood. Philadelphia: J. B. Lippincott & Co., 1864. (From the Publishers.)

On Rheumatism, Rheumatic Gout, and Sciatica, their Pathology and Treatment. By HENRY WILLIAM FULLER, M. D., Cantab., F. R. C. P., &c. &c. From the last London edition. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

A Treatise on the Chronic Inflammation and Displacements of the Unim-pregnated Uterus. By WM. H. BYFORD, A. M., M. D., Prof. Obstetrics in Chi-eago Med. Coll. &c. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

A Manual of the Practice of Medicine. By THOMAS HAWKES TANNER, M. D., F. L. S., &c. &c. From the last London edition. Enlarged and Improved. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

A Handbook of Uterine Therapeutics. By EDWARD JOHN TILT, M. D., M. R. C. P., &c. &c. New York: Wm. Wood & Co., 1864. (From the Publishers.)

Proceedings of the Academy of Natural Sciences of Philadelphia. March and April, 1864.

Report of the Medical Missionary Society in China, for the year 1863. Hong-kong, 1864. (From Dr. J. G. KERR.)

Ninth Annual Report of the Births, Marriages, and Deaths in the city of Providence, for the year 1863. By EDWIN M. SNOW, M. D., Superintendent of Health and City Register. Providence, 1864. (From the Author.)

Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for the year 1863. Philadelphia, 1864. (From GEO. E. CHAMBERS, Reg. Clerk.)

Twenty-first Annual Report of the Board of Trustees and Officers of the Central Ohio Lunatic Asylum, to the Governor of the State of Ohio, for the year 1863. Columbus, 1864.

Eleventh Annual Report of the Pennsylvania Training School for Feeble Minded Children. Philadelphia, 1864.

Annual Report of the Louisville Marine Hospital, for the year ending Feb. 29, 1864. Published by the Trustees and Superintendent. Louisville, Ky., 1864.

The Fortieth Annual Report of the Officers of the Retreat for the Insane, at Hartford, Conn., April, 1864.

Forty-seventh Annual Report of the state of the Asylum for the Relief of Persons deprived of the Use of their Reason. Philadelphia, 1864.

The following Journals have been received in exchange:—

Journal de la Physiologie de l'Homme et des Animaux. Publié sous la direction du Docteur E. Brown-Séquard, avec la collaboration de MM. Martin-Magron, Ch. Martins, Ch. Robin, Ch. Ronget, P. Broca, L. Ollier, A. Chauveau, et Balbini, secrétaire de la redaction. Jan., April, and July, 1863.

Revue de Thérapeutique Médico-Chirurgicale. Redigé par A. MARTIN-LAUZER, M. D. March, April, May, 1864.

The British and Foreign Medico-Chirurgical Review. April, 1864.

The Medical Times and Gazette. March, April, May, 1864.

British Medical Journal. Nos. 167, 168, 169, 170, 171, 172, 173, 174, 175. 1864.

The Ophthalmic Review: a Quarterly Journal of Ophthalmic Surgery and Science. Edited by J. ZACHARIAH LAURENCE, of London, and THOMAS WINDSOR, of Manchester. April, 1864.

Edinburgh Medical Journal. April, May, 1864.

Glasgow Medical Journal. April, 1864.

Dublin Medical Press. April, May, 1864.

The Medical and Surgical Review. [Australian.] Edited by JAS. KEENE, late Surgeon to the West London Hospital. October, November, December, 1863, January, 1864.

Canada Lancet. Edited by W. E. BOWMAN, M. D. March April, May, 1864.

The Boston Medical and Surgical Journal. Edited by SAMUEL L. ABBOT, M. D., and JAS. C. WHITE, M. D. April, May, June, 1864.

American Medical Times. April, May, June, 1864.

The Cincinnati Lancet and Observer. Edited by E. B. STEVENS, M. D., and J. A. MURPHY, M. D. April, May, June, 1864.

The St. Louis Medical and Surgical Journal. Edited by M. L. LINTON, M.D., and F. W. WHITE, M. D. May and June, 1864. (No. for March and April has not been received.)

The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum. April, 1864.

Ohio Medical and Surgical Journal. Edited by the Professors of Starling Medical College. March, May, 1864.

Buffalo Medical and Surgical Journal. Edited by JULIUS F. MINER, M. D. March, April, May, June, 1864.

The Chicago Medical Journal. Edited by DELASKIE MILLER, M. D., and EPHRAIM INGALS, M. D. May, June, 1864.

The Chicago Medical Examiner. Edited by N. S. DAVIS, M. D. March, June, 1864.

The Pacific Medical and Surgical Journal. Edited by V. J. FOURGEAUD, M. D. March, April, 1864.

The San Francisco Medical Press. Edited by HENRY GIBBONS, M. D., and R. B. COLE, M. D. April, 1864.

The American Journal of Ophthalmology. Edited by JULIUS HOMBERGER, M. D. Vol. II., No. 1.

The American Journal of Science and Arts. Edited by Profs. B. SILLIMAN, B. SILLIMAN, Jr., and J. D. DANA. May, 1864.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by Wm. PROCTER, Jr., Prof. Pharmacy in Philadelphia College Pharmacy. May, 1864.

American Druggists' Circular and Chemical Gazette. April, May, June, 1864.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to Messrs. Trübner & Co., Booksellers, No. 60 Paternoster Row, *London, E. C.*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor may be addressed to his residence, 1525 Locust Street.

ALL REMITTANCES OF MONEY, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

 The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

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XIV.	Handbuch der praktischen Medicin, von Dr. Hermann Lebert, Professor de Medicin Klinik und der Speciellen Pathologie und Therapie in Breslau. Dritte verbesserte Auflage. Tübingen, 1863.	
A	Manual of Practical Medicine, by Dr. Hermann Lebert, Professor of Clinical Medicine and of Special Pathology and Therapeutics at Breslau. Third edition. Two vols., pp. 1091, 1074.	172

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XIX. The Pathology and Treatment of Venereal Diseases: including the Results of Recent Investigations on the Subject. By Freeman J. Bumstead, M. D., Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York; late Surgeon to St. Luke's Hospital; Surgeon to the New York Eye and Ear Infirmary. A new and revised edition. With illustrations. Philadelphia: Blanchard & Lea. 1864. 8vo. pp. 640.	208
XX. A Treatise on the Chronic Inflammation and Displacements of the Unimpregnated Uterus. By Wm. H. Byford, A. M., M. D., Professor of Obstetrics, etc., Chicago Medical College, Medical Department, Linden University. 8vo. pp. 215. Philadelphia: Lindsay & Blakiston. 1864. 209	
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THE
AMERICAN JOURNAL
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FOR JULY 1864.

ART. I.—*On Injuries of the Head.* By JOHN ASHHURST, Jr., M. D., one of the Surgeons to the Episcopal Hospital, and Executive Officer to the Cuyler U. S. Army General Hospital.

THE diagnosis and treatment of injuries of the head have occupied the attention of medical writers from the days of Hippocrates to the present time, and yet there is no class of cases in which the surgeon finds so little that is reliable to guide him, and so much that is uncertain to mislead him. I propose to glance rapidly at some of the more frequent forms of injuries of the head, illustrating my remarks with apposite cases, and endeavouring to deduce some practical rules and principles for their treatment.

In wounds of the face, whether incised, lacerated, or contused, the edges should be brought closely together with sutures, for the tissues are so vascular that there is almost no risk of sloughing (as in the extremities), and the resulting deformity is apt to be much less by this plan than if the wound be permitted to heal by granulation. Almost the only cases where I can recall having obtained "union by the first intention," properly so called, have been wounds of the face or scalp. The best dressing for wounds of the face is unquestionably cold water.

CASE I. *Incised Wounds of Face produced by Broken Glass; Immediate Union.*—Mary T.— was riding in a passenger car with her face turned towards the front window, when the car suddenly running off the track, her head was violently thrust through the pane of glass, which it shattered. A large piece of glass stuck into her face, and was thence removed; I found a deep incised wound on the right side of the nose, going down to the bone, and in all about two inches long. The bleeding was profuse, though no large vessel spouted. I washed away all dirt and fragments of glass, and closely approximated the edges with sutures, supported by isinglass plaster, and sent her to the Episcopal Hospital, with

instructions to the resident surgeon to keep cold water constantly applied. No other dressing was required. After a few days I removed the stitches, and found the wound completely united, really "by the first intention," there having been no suppuration whatever, and the cicatrix consequently being but slight, and not disfiguring.

In wounds of the scalp it is not necessary to employ sutures, as the parts can always be approximated closely without their use. The scalp should be shaved, and the wound washed as clean as possible; this is important, as any gravel or other dirt between the edges will necessarily prevent primary union.

The lips of the wound may be brought together with adhesive plaster, or better, with narrow strips of "Donna Maria" gauze, made to adhere to the scalp on either side by collodion, which may be most conveniently applied by means of a camel's-hair brush. The gauze should be first applied to one side of the wound, and, when the collodion is dry, should be firmly and smoothly drawn across, so as to bring the cut edges into contact through their whole extent. The dressing should now be completed by the application of a moderately thick compress, and a firm roller bandage. Ligatures need never be used in scalp wounds, no matter how profuse the hemorrhage; a compress and bandage are always sufficient to prevent bleeding. By moderate pressure upon a wound of the scalp, there is no cavity left in which the discharges can accumulate; on the other hand, by excessive pressure, any matter which may form will be forced to burrow between the scalp and the bone on either side of the compress; hence, the bandage for a scalp wound should be firm, but not tight.

Even if any untoward accident should prevent immediate union in scalp wounds, a very good cure may almost always be eventually obtained.

CASE II. Lacerated Scalp Wound.—Gibbons, a boy of about eleven years, was admitted to the Pennsylvania Hospital on July 13, 1861, with a lacerated wound of the scalp, caused by his being struck by a cart-wheel. The wound formed two sides of a triangle, the scalp hanging down in a flap, and the skull being denuded of periosteum for a space of about three-quarters of an inch square.

The flap of scalp was replaced, gauze and collodion and a compress and bandage being applied in the manner indicated above. Everything went well, till in the next night but one after his admission, he was discovered with his head thrust through the hole of the fracture-bed on which he lay, and into his bed-pan, which was full of urine. The next day his face was greatly swollen, his eyelids closed, and the scalp around the wound soft and boggy. The dry dressing was now removed, and cold water substituted; of course, all hope of primary union had to be abandoned, but, under simple dressing, he made a good recovery without any sloughing or necrosis, and was discharged cured on August 26th, having been in the ward 44 days.

In wounds of the face complicated with fracture of the facial bones, union by adhesion is not to be anticipated; yet the soft parts should here

also be approximated by sutures, as the resulting line of cicatrix will be much narrower than if the wound be allowed to gape. Loose pieces of bone should be removed, and it may even sometimes be necessary to make a miniature resection before restoring the parts to their original position.

CASE III. *Crushing Injury of the Face produced by a Blow.*—Mary K_____, a woman past the middle age, was admitted to the Pennsylvania Hospital on March 26, 1862, having been struck on the face by her husband with a frying-pan or other hard utensil. Her nose was hanging down over her mouth, the nasal bones being fractured, and the posterior nares fairly exposed. In order to replace the nose in its proper position, I found it necessary to remove a portion of the projecting vomer with a pair of bone forceps. The nose was then replaced and attached with points of lead suture, cold water being constantly applied. She passed in a few days under the care of my friend and former colleague, Dr. Charles C. Lee, now of the regular army; but I saw her some time afterwards, and found that she had recovered with a nose useful though deformed, the cure having been effected by granulation.

So closely do the features depend for their form upon their bony supports, that the loss of even a very small portion of one of the facial bones will very generally entail a great disfigurement.

CASE IV. *Injury of the Face from the Kick of a Horse.*—Jeremiah D_____, aged 17 years, came into the Pennsylvania Hospital July 31, 1861, with lacerated wounds of the face, produced by the kick of a horse; on examination, one of the lachrymal bones was found to have been fractured. Lead sutures and cold water were employed, and the cure was completed by the 33d day, the patient being discharged Sept. 2. There was some distortion of the eye corresponding to the fractured lachrymal bone, and a marked depression over the site of the bone itself.

CASE V. *Compound Fracture of the Malar Bone from a Blow.*—In the following case I find the result stated in my record as a "perfect cure," implying that there was no perceptible deformity when the patient was discharged. Owen K_____, aged seventy years, came into the Pennsylvania Hospital very drunk on Feb. 14, 1862. His injuries had been received by blows from a policeman's billet. He had contused wounds of the cheek and brow, and a compound comminuted fracture of the left malar bone, some fragments of which were removed; lead sutures and cold water were employed, and the cure was completed on the 10th of March, the patient having been 24 days in the ward.

In wounds of the upper or lower lip it will generally be found best to introduce a hare-lip pin, in addition to the interrupted sutures. I confess my experience of wounds of the lip and of the hare-lip operation does not incline me to rely with Mr. Erichsen solely on the interrupted suture.

I shall say nothing of fractures of the lower jaw, as that bone may be looked upon rather as an appendage to than as a portion of the head.

Greatly more serious injuries of the head are those in which the cranium proper or bony envelope of the brain is involved. The skull varies greatly

in strength and thickness in different persons; in some, a slight fall or blow may prove sufficient to produce fracture, while in others an accident much more severe in appearance may be innocuous. I have one case recorded of an Englishwoman, aged forty-five, who was brought to the Pennsylvania Hospital Oct. 16, 1861, with a small scalp wound; the persons who brought her declared that she had fallen from a fourth story window upon a hard pavement, breaking through a balcony in her descent. The bone was deprived of periosteum for a small space, and when she became sober—for she was very drunk when admitted—she showed some slight symptoms of contusion of the brain, but her condition was never serious, and her recovery satisfactory, though slow; she was discharged cured after 71 days' treatment.

I have said that injuries of the head in which the bone is involved are always extremely serious; yet I may make the paradoxical assertion that fractures of the skull are not by themselves attended with danger. In fractures in any part of the body there are two things to be considered, viz., the condition of the bone and the condition of the soft parts; and if the soft parts are properly looked after, the bone will generally take care of itself. So in fractures of the skull, the danger is not from the injury to the bone itself, but from the injury originally inflicted on the brain, or which may result to the brain from inflammation or its consequences. A man needs the bones of his leg to support his weight, and to enable him to walk, but, except for the protection of his brain, his skull is of very little use; and hence, there are cases recorded where very large portions of the skull have been removed without any sensible inconvenience to the patient. As a case in point, I would instance the following, which I have translated and condensed from the report of M. Fuzier, in the *Recueil de Mémoires de Médecine, de Chirurgie, et de Pharmacie Militaires*, for July, 1863.

Plumeret, an Alsatian, of lymphatic temperament, and obtuse physical sensibility, but perfect *moralité*, was attacked on the 2d of December, 1862, on the railroad in the neighbourhood of Téjéria, by four men, who knocked him down and gave him numerous blows on the head with a hatchet. They then threw a lasso around his neck and dragged him to a marsh, where they left him. He remained in a fainting condition during the night, and only regained his consciousness towards morning, having lost a great quantity of blood. He made his way to the road, and was picked up by the train going to Téjéria, where he received the first dressing.

On the evening of the 4th he was transferred by rail to the hospital at Vera Cruz, where his injuries were found to be as follows: A wound on the left side of the face from the upper part of the ear to the nostril; the malar bone was divided. Another wound over the right eye, about two inches long; a wound about four inches long on the back part of the right side of the head; two wounds between two and three inches long on the top of the head. A wound about three and one-half inches long on the

right side of the forehead, oblique from above downwards, and from without inwards, and extending to the median line; from this wound a lozenge-shaped plate of bone had been removed about two inches and a half long by one and a half broad, and involving the whole thickness of the skull; in its inner side could be seen the groove of the meningeal artery. The dura mater could be seen in the wound beating synchronously with the heart's pulsations. There was still another wound, also nearly three and a half inches long, about three-quarters of an inch above the supra-orbital ridge, forming an angle with the preceding wound, which it almost met at its inner edge. From this wound was removed a fragment of bone which formed nearly the whole of the right supra-orbital ridge, but involved only the outer table of the skull.

The pulse was full, but natural; some headache; no stupor and no paralysis. The treatment consisted in cold to the head, which was elevated; purgatives, sinapisms, and low diet. With the exception of an intercurrent attack of intermittent fever, and another of acute dysentery, everything progressed favourably, and the patient left the hospital to return to France in the beginning of February, 1863, all the wounds being healed, except that from which the large plate of bone had been removed, which still gave issue to a very slight discharge.

This was one of many cases in which it has almost seemed as if the extensive injury to the bone had preserved the more important organ—the brain; in fact, when the skull gives way, the force of the blow producing the fracture is thus exhausted, and the brain receives comparatively little of its impulse; whereas, if the skull be strong enough not to be broken, the same blow transmitted to the brain will probably produce contusion and serious disorganization in that organ. Hence, in two injuries produced by an equal force, in one of which the skull is fractured, and the other not, the prognosis may be really more favourable in the former, for the brain is more likely to have escaped injury than when its bony case has not given way.

CASE VI. Compound, Depressed Fracture of Skull with Compound Fracture of Lower Jaw and Fracture of Humerus: Recovery.—George D., aged 33 years, an Englishman, was admitted to the accident ward of the Episcopal Hospital about 9 A. M. of Nov. 12, 1863. He had been picked up in an insensible condition on the track of the Trenton Railroad, having been injured in an unknown way at some time during the night. His stupor was profound, but evidently due in a great degree to liquor. I saw the patient about two hours later, and found his condition to be as follows: There was a lacerated and contused wound of the scalp in the right parietal region, about two inches in length. By introducing the finger the skull was found to have sustained an extensive depressed fracture. There was also a large wound extending from the right ear to the symphysis of the lower jaw, which was obliquely fractured near the angle of the right side with considerable comminution. There was in addition a frac-

ture of the inner condyle of the right humerus, which, however, was not detected for two or three days.

The case seemed quite hopeless, and the first dressing was applied more as a matter of routine than with any expectation of a second being required. The edges of the wound of the cheek were approximated with lead sutures; those of the scalp wound with adhesive plaster; compresses of sheet lint and a "Barton's bandage" applied with moderate firmness, and a cloth soaked in cold water placed to the head and kept constantly saturated. His dressing was thereafter renewed as often as cleanliness required until all danger of inflammation had passed, when warm water was substituted for cold, and the application made only to the wounds. The only constitutional treatment adopted was the administration of enough morphia to calm delirium and procure sleep. At first absolute diet was enjoined; nothing stronger than barley water being permitted, which, however, was given *ad libitum*; after a week or ten days, two or three tablespoonfuls of milk were allowed in the twenty-four hours; still later beef essence in moderate quantities, and finally nutritious food and even free stimulation with wine whey and brandy punch.

At one time profuse diarrhoea threatened to exhaust the patient, but was promptly checked by laudanum enemata. Two attacks of facial erysipelas occurred, one of which was attended with so much cerebral disturbance as to seriously endanger life; both, however, passed off without permanent traces. For many days delirium alternated with coma, and when both had passed away the mind was left in so feeble a condition as to be almost deranged. His mental state, however, improved nearly as quickly as his wounds healed; and when he left the house, Dec. 24, 1863, six weeks after admission, a slight occasional pettishness only remained to tell the tale of what his brain had gone through. His physical condition at the same time was eminently satisfactory; there was still some dead bone to come away from his jaw, which was disfigured by the large amount of callus thrown out. With this exception and the depression of the skull, which could plainly be felt through the scalp, he bore no traces of the severe injuries he had sustained.

I saw this patient respectively one month and two months after his discharge; his condition was about the same as at that time. He considered himself in perfect health, and had been drunk nearly every day since he had left the hospital.

CASE VII. Simple depressed Fracture of Skull: Recovery.—James H., aged eight years, a schoolboy, was admitted to the Pennsylvania Hospital, Aug. 27, 1861, having been hurt by a fall from a tree. He was found to have a simple depressed fracture of the left parietal bone. He was at no time insensible; his head was shaved, ice applied, and he was freely purged; he was discharged, cured, having had no bad symptoms at any time, on the 16th of September; having been under treatment twenty days.

Fractions of the skull over the region of the frontal sinns are perhaps more frightful in appearance than those of any other part; and meningitis sometimes occurs, giving to them, of course, a certain amount of risk; but, as a rule, they do well; their prognosis is more favourable than in fractures of any other part of the skull.

CASE VIII. *Compound Fracture of the Frontal Sinus: Recovery.*—George M. was admitted to the Pennsylvania Hospital, March 12, 1862, with a compound fracture of the frontal sinus, received from the kick of a horse: the whole outer table was destroyed as well as the orbital plates; the finger could be passed over both eyes and easily recognized the mucous lining of the sinus. The edges of the wound were brought together and cold water dressing applied, the patient being placed upon low diet. After about a week he became delirious, and in ten days violent, so that it was necessary to keep him in bed by mechanical restraint. He was now bled from the arm to the amount of eight fluidounces, and fluid extract of veratrum viride in doses of four drops given every three hours. A few doses brought the pulse down from 112 to 70 or 80, when the remedy was suspended; in four days more he was rational and quiet, his wound healthy and suppurating freely. He was discharged, cured, April 14th, having been under treatment thirty-three days.

One of my colleagues at the Cuyler General Hospital at Germantown, Dr. Robert N. Downs, has kindly shown me a patient of his who was wounded at Gettysburg, receiving a fracture of the frontal sinus, slightly to the right of the median line; the wound is still open, but Dr. Downs thinks it can eventually be closed by a plastic operation. The patient states that he has a constant ringing in the ears, and falls whenever he attempts to stoop.

Fractures of the base of the skull are more fatal than those of the vault; and the reason is that in the former the brain is generally more bruised and lacerated. This may be accounted for by the number of bony prominences in that part of the skull; the same fact on which depends the greater frequency of contusion of the base of the brain than of other parts, in cases where the bone is not broken.

CASE IX. *Fracture of Base of Skull; Life prolonged till Fourteenth Day; Autopsy.*—The following account is condensed from very full notes taken at the bedside of the patient, by Dr. Horace P. Middleton and Mr. Bodine, resident surgeons at the Episcopal Hospital. Thomas A., aged fifty-two years, an Irishman by birth, and by occupation a weaver, was admitted about midday of January 25th, 1864, with a fracture through the spine and body of the left scapula, and an injury of the head which was diagnosticated as fracture at the base of the skull, a diagnosis which was confirmed by *post-mortem* inspection. His injuries had been received by falling down a flight of stairs a short time previously. His left ear was filled with clotted blood, and there was marked ecchymosis both palpebral and orbital on the same side. The mouth was considerably distorted, being drawn to the right side, and his mind exhibited that uneasy pettishness and restlessness which sometimes accompany concussion or contusion of the brain. The fractured scapula was dressed in the usual manner, the patient put to bed, his head shaved, and a bladder filled with pounded ice applied. Absolute diet and the officinal solution of morphia to be given *pro re nata* constituted the rest of the treatment.

26th. A. slept tolerably well last night. This morning his tongue is covered with a white fur and he complains of nausea; pulse 74, and fuller

than yesterday (his tongue had been very dry, and his pulse 84, and weak). This evening he complained of great pain over the whole spine.

27th. Pain over the spine has disappeared. A. is disposed to sleep all the time; he has passed his urine several times involuntarily; his bowels were opened by an enema.

28th. Complains of nausea and headache; is unable to close the left eye except when asleep, when it closes of itself.

30th. He is allowed a moderate quantity of milk; he is quite deaf, especially on the left side; delirious.

Feb 1. Facial erysipelas on the right side; orbital ecchymosis has disappeared; pulse ranges from 100 to 120. Give wine whey and beef essence, afterwards milk punch. Lungs very much congested. About this time began a profuse watery discharge from his left ear, which continued up to within a few hours of his death.

4th. Pulse can hardly be counted, being very frequent, and masked by his jactitation and subsultus.

6th. Comatose; respirations 27 to the minute, pulse 68. Died about 7 A.M. of Sunday, Feb. 7th.

Autopsy 36 hours after death. Rigor mortis but slight; great emaciation; excoriations of trunk from his having scratched himself; a bed-sore over the sacrum. There was much blood effused around the left scapula, which presented a fracture passing transversely through its spine, and becoming radiated and comminuted in its body. There had been no attempt at union. Within the cranium there was considerable bloody intermeningeal effusion, the membranes and the brain itself being also much congested, and the membranes presenting a slight lymphy deposit. There was a radiated fissure through the petrous portion of the left temporal bone, extending into the orbit; the brain itself was somewhat lacerated in the region corresponding to the fracture. The other organs were not examined.

These are the most serious cases of head wounds that are met with in civil hospitals; but injuries that appear very slight will occasionally result fatally. I reported a case of death following an ordinary scalp wound in the number of the *American Journal of Medical Sciences* for January, 1864, and a similar case, in which metastatic abscesses were found, was reported by Dr. Hutchinson to the Pathological Society of Philadelphia, and may be found in their Proceedings for Sept. 22, 1858.

Sometimes scalp wounds are followed by necrosis, in which sequestra are thrown off involving the whole thickness of the bone. I treated a soldier at the army hospital at Chester, who had received a simple gunshot wound of the scalp, in which, however, hospital gangrene setting in, the bone became involved, and when the necrosed part had come away, the pulsations of the brain could easily be seen at the bottom of the wound. When I lost sight of this man he was doing guard duty without the slightest inconvenience. Dr. Downs, of the Cuyler Hospital, showed me a portion of the left parietal bone, the size and shape of the crown of a trephine which had been exfoliated from the skull of one of his patients. This man had no brain symptoms remaining, except hebetude and slowness of thought.

A good deal of space is usually devoted in systematic works on surgery

to the supposed diagnostic marks which distinguish *concussion* from *compression* of the brain. But I think we are coming now to look upon *concussion* as a misnomer ; the cases usually classed under that designation are really *contusion* of the brain, and these contusions, like those in any other part of the body, may vary in intensity from the slightest bruise to the most extensive and dangerous disorganization. And as bruises in other parts of the body, when not so severe as to cause instant or very rapid destruction, are of consequence from the risk of subsequent inflammation, so in contusion, or, as it used to be called, concussion of the brain, if the patient survives the first shock, inflammation is what is to be guarded against ; and in many cases the treatment of concussion and compression must be the same.

There are certain remedies and modes of treatment in injuries of the head, and especially in fractures of the skull, which have become venerable by age, and which are hence liable to be adopted as correct, without its being considered if they are really commended by science and experience. I propose very briefly to consider the most prominent of these, and to state, as modestly as possible, my own convictions concerning them.

And first, as to trephining, or trepanning : that the operation has been often successful (that is to say that patients have recovered after it) of course cannot be denied ; but it is doubtful if they might not have recovered without it. Desault bored a great many men's heads, and they all died ; he then gave up boring men's heads, and they all, or nearly all, got well. To elevate a depressed piece of bone is desirable, but so many cases recover where the bone remains depressed, and so many die where it is elevated by trephining, that the remedy has proved, in such cases, hardly an assistance to nature. The products of inflammation have been occasionally evacuated by trephining, but there have been so many unsuccessful and fatal cases, on the other side, that I think very few surgeons now would resort to the operation in this contingency. Of thirty-five cases in which the trephine had been used in our army, from September, 1862, to March 31st, 1863, twenty-eight died, two remained undecided, and but five had recovered ; and it is not impossible that some of these might have recovered equally without operation. I do not say that I would never use the trephine ; but I do say, unhesitatingly, that I have never seen a case where I think its use would have been justifiable. I would, of course, remove all loose fragments, and if I could elevate a depressed portion of bone without too much interference, I would do so, but beyond this I should be disposed to leave the case to nature.

Bleeding is another remedy which has been very largely employed in injuries of the head, and is still recommended even by those who forego its use in other cases ; and yet I think it is hardly indicated either by reason or experience. A clot on the brain will not be relieved by bleeding, nor will bleeding prevent a clot's formation. The results of bleeding in inflamma-

tions of other organs have not been so favourable as to lead us to resort to it from analogy in inflammation of the brain; and bleeding as a prophylactic appears to me as irrational as it is cruel. I believe free stimulation is more often required in fracture of the skull than the use of the lancet. I have, indeed, recorded in this paper a case of fractured frontal sinus, which recovered after bleeding; but I should be loth to infer that the bleeding was the cause of that recovery.

Calomel and tartar emetic have been much used in injuries of the head, and Desault's experience with large doses of the latter was extremely favourable to its employment. But I imagine there are but few surgeons now who would be inclined to push it to the same extent that he did. If inflammation occur in these cases, I should be disposed to regard calomel in small doses as a remedy which might possibly be of use. But I cannot see the propriety of giving it in large amounts, as has been done, to every man that may have a broken skull.

The course, then, which I would pursue in a case of fractured skull or contused brain, would be as follows: If the case were a compound fracture, I would remove any fragments that were detached, and if a portion of bone could be elevated without dangerous interference, would restore it to its proper position. I would place the patient in bed, in a darkened room, with his head shaved, and cold locally applied. I am convinced that the profession does not appreciate the great advantages to be derived from cold, and especially dry cold, in surgical cases. I consider it second to no remedy in the treatment of injuries of the brain. Taking the view that I do, that the danger in these cases is from inflammation, I would endeavour to obviate any causes that might excite it, and to keep the system in a condition as well prepared to meet it as possible. As these accidents generally occur to men in robust health, and as there has generally been but little hemorrhage, the diet may, for the first few days, be very limited. There has been no drain upon the system as in other surgical injuries, and the risk of exhaustion and fatal debility is, therefore, less. I should not, however, hesitate, if it was indicated by the symptoms, to resort to free stimulation from the outset; and it will generally be necessary to have recourse to it in the progress of the case. I should use opium, in some form, freely in almost every case. I cannot understand the fear of opium in injuries or inflammation of the brain. The same principles which induce its administration in peritonitis make it suitable in these cases. I would therefore "put the brain in splints," if the expression may be allowed, by the use of opium.

But the most important thing is to carefully watch the case from day to day, and to endeavour, in the words of Dr. Watson, to "obviate the tendency to death." If coma be threatened, a few cups or a small blister to the back of the neck may be of service. Derivation from the bowels by means of purgatives may be sometimes particularly indicated. An attack of facial

erysipelas (a mark of constitutional depression) will call for the use of wine or brandy; and in short every case must be studied for itself, taking into view its natural history, so to speak, and its pathology, with all the lights that can be derived from reason, analogy, and experience.

In conclusion, I would say a few words as to two symptoms which are supposed to characterize fractures at the base of the skull. These are orbital ecchymosis, and bloody or watery discharges from the ear or nostril. Now neither of these is pathognomonic, and though, of course, their concurrence would make the diagnosis very probable, they might both be present, and yet no fracture exist. Orbital ecchymosis shows merely that a vessel is ruptured within the orbit; and this may occur in connection with a fracture of the malar or superior maxillary, as in a case published by Mr. Holmes, and referred to by Mr. Hewett in his admirable monograph on injuries of the head, or even without any fracture at all, as in the case of McAllister, reported by myself in the *Proceedings of the Pathological Society of Philadelphia*, vol. ii. p. 115 (*Am. Journ. of Med. Sci.* for July, 1862, p. 112). Similarly a bloody or watery discharge may proceed from the cavity of the tympanum alone, without any fracture of the skull, as in cases reported respectively by Mr. Gray and Mr. Hewett.

I have said nothing about hernia cerebri, because it is of rare occurrence, and when it is met with, should, I think, be treated as simply as possible, and without mechanical meddling or disturbance.

PHILADELPHIA, April 8, 1864.

ART. II.—*Gunshot Fracture of Superior Maxilla, and Wound of Internal Maxillary Artery—Ligation of the Common Carotid Artery—Paralysis with Convulsions of opposite Side, after 35 days—Death after 41 days—Abscesses of the Brain.* By W. W. KEEN, JR., Acting Assistant Surgeon U. S. A.

CORPORAL C., 20th Mass., aet. 33; in the service 2 years; health excellent; was admitted to Ward No. 2, Satterlee U. S. A. General Hospital, West Philadelphia, July 11, 1863.

He had been wounded July 1st, 1863, at Gettysburg, by a minie ball, which entered $1\frac{3}{4}$ inch below, and a little to the left of the left eye, and lodged just behind the first upper molar of the same side, partially destroying the left palatine arch, and knocking out the last two molars, and the corresponding portion of the alveolar process. The ball remained lodged in the jaw for two days, and fell, on the third day, into the mouth, when he secured it. Six days after receiving the wound he had an attack of secondary hemorrhage, and the day before his admission a second.

On admission, the wound looked exceedingly healthy, suppuration and cicatrization went on well, under cold water dressing and ordinary soft diet, and considerable débris of bone was discharged from the posterior wound.

On the morning of July 16th, a considerable hemorrhage, evidently arterial, set in; but as it ceased, on the application of cold water, in a few minutes, nothing further than absolute rest was prescribed. At 12 M. another and severer hemorrhage occurred, following exertion (in which he proved most persistent), when the anterior and posterior wounds were plugged with lint, saturated with a solution of alum and benzoic acid ("*aqua Plagiare*"), and a compress and bandage were applied to the external wound. At 3 P. M., another severe hemorrhage took place both from the wounds and by the nares, the latter, doubtless, through the antrum, which had been traversed by the ball. This ceased spontaneously, but a cord was introduced into the nares, and preparations made to plug them anteriorly and posteriorly in case of further hemorrhage. Great difficulty was experienced in plugging the posterior wound both from its position and because the finger could not be introduced into the mouth and manipulated except with the greatest difficulty. This resulted from the swelling and injury to the muscles of the face and jaw, which prevented almost entirely the opening of his mouth. At 5 P. M. another hemorrhage occurred from the insecurely plugged posterior wound, but it soon ceased spontaneously. At 6 P. M. a violent hemorrhage occurred by both wounds. An attempt was made to close the anterior and posterior wound by introducing a cord, by means of a probe, and plugging them, as is done in plugging the nares; but the probe could not be carried through. The liq. ferri per sulph. was then tried, but was ineffectual. He had now lost a large quantity of blood (say from 5xx to 5xxx) during the day, and still further and severer loss threatened during the night. It was evident that either the main trunk, or a large branch, or branches of the internal maxillary, had been injured, and in consultation with Asst. Surgeon H. S. Schell, U. S. A., and several other of my colleagues, it was determined to tie the carotid.

The question between ligating the common carotid, and the external, was decided in favour of the former for the following reasons:—

1st. The brain would be speedily supplied by the right carotid, the vertebrals, &c.

2d. The great danger being recurrence of hemorrhage by the too speedy re-establishment of the circulation, through the anastomosing branches, ligation of the common carotid would delay it longer than that of the external carotid, and thereby increase the chances for recovery—doubtful at the best.

3d. If the external carotid were ligated, the ligation of the common trunk would not be available as a last resort, since the anastomosis from the temporals, the opposite internal maxillary, &c., would still keep up the recurrent hemorrhage.

4th. Experience showed (as in the case of General Bayard, whose internal maxillary was cut by an arrow in an Indian fight in November, 1860) that the ligation of the common trunk would control the hemorrhage from the internal maxillary.

In consequence of the position of the wound, and of the hemorrhage, the man could neither be etherized nor lie down, so he sat upon the edge of the bed, and I proceeded to ligate the artery at 6.10 P. M. (July 16, 1863). He bore the operation without flinching or the least manifestations of pain. The artery was found without the slightest difficulty, and was tied without injury to the descendens noni or exposure of the vein or pneumogastric, just above the omohyoid; the temporal artery being watched, to prove that the ligation was effectual. On tightening the ligature, violent spasms of

all the muscles took place, with syncope, resulting from the sudden derangement of the circulation in the brain, heightened in effect by the weakness from previous loss of blood, and the patient's upright position. He was immediately placed in the recumbent posture, the hemorrhage having ceased, and some brandy administered. The spasms ceased and consciousness returned in a few seconds. A single suture was introduced over the wound of ligation, and gr. $\frac{1}{2}$ of morphia was given.

At 6.30 P. M. his pulse was 110 and rather weak. I ordered milk punch $\frac{1}{2}$ j (½ liquor) and beef-tea $\frac{1}{2}$ ij, every two hours. Cold water dressings were applied. At 9 P. M. he was still awake; no pulsation was felt in the temporal. Pulse 132, and feeble. At 11.30 P. M. he was asleep. The left temporal was pulsating distinctly by recurrent circulation established in $5\frac{1}{2}$ hours. Pulse 132, as before.

July 17 (first day after the operation), 9 A. M. Pulse 126, and fuller; he was perfectly conscious and intelligent; his face was quite blanched on the left side. He had slept pretty well, and felt better. Continued treatment. 6. P. M. Pulse 123; wound of ligation partly healed; doing well.

18th. Pulse 112, and stronger.

19th. 5 A. M. Hemorrhage occurred from the anterior and posterior wounds amounting to say 5 iss, but it ceased spontaneously. This was partly due to his constant efforts to get up and help himself, although ordered to lie perfectly still, and warned of the consequences of disobedience. Even the occasional employment of physical force by his attendants was necessary. 10 A. M. Another and violent hemorrhage occurred, ceasing again spontaneously.

In view of these recurring threatening hemorrhages, another consultation was called of Asst. Surgeon H. S. Schell, U. S. A., and Acting Asst. Surgeons Walter F. Atlee and Thos. Geo. Morton, when it was decided to expose the antrum, and plug both it and the wound. An incision was made from the angle of the mouth, on the left side, $2\frac{1}{2}$ inches long towards the ear, the cheek was dissected upwards, and the anterior wall of the antrum and the inferior boundary of the wound were removed by the scalpel and bone forceps. The loose pieces of bone were removed, and the wound and the antrum, now one common cavity, were firmly plugged with lint saturated with Mousel's solution. No serious bleeding of the soft parts ent took place, in consequence of the ligation of the carotid, and the hemorrhage from the wound ceased. He bore this operation, also, unetherized, and without even wincing under the knife; his pulse, after the operation, was 132 and feeble. Ordered beef-tea 5 ij, milk punch 5 j, alternately every half hour, tr. ferri chloridi gtt. xx, and quiniæ sulph. gr. ij, t. d., with perfect rest, and morphia sulph. gr. $\frac{1}{2}$, immediately, and the same at bed-time.

21st. The ligature came away from the carotid this morning, $4\frac{1}{2}$ days after its application. The wound in the cheek was suppurating well; he seemed slightly stupid, and could not be kept quiet in bed save by force. Passed his urine and feces in bed, but not, it seems, involuntarily; pulse 96, rather stronger; appetite good.

23d. Pulse 99, otherwise the same.

24th. Pulse 100, and rather weaker; his intelligence was evidently almost entirely restored. He no longer passed his urine and feces in bed. Wound doing well. Appetite good and well sustained by soft food, such as beef, mutton, or chicken broths, beef-tea farina, punch, egg-nog. The quinia and iron were continued.

29th. The wound of ligation was closed, except at one point: the pus from the cheek and jaw was rich, yellow, and healthy; his intelligence—never of the best, for he was a stolid German—was entirely restored.

31st. Still decidedly improving; the plug of charpie was lying loose in the wound, and in the jaw, and as it had been twelve days since the hemorrhage, I removed it with the greatest ease, and united the edges of the incision in the cheek by silver wire sutures; part of these edges were already cicatrized; pulse 96.

August 1. A violent hemorrhage set in at noon, by which he lost about one pint of blood. It was checked by plugging the antrum whence the hemorrhage occurred, with charpie, saturated with Monsel's solution. Pulse, at 2 P. M., 100.

2d Another hemorrhage of say f5iv, which was checked as before. Pulse 98.

7th. Another hemorrhage of say f5iv, checked as before. His general condition and appetite were surprisingly good, after the loss of so much blood.

13th. As lively as a cricket; laughing and even joking; wound doing well; appetite capital.

18th (33d day). The plug was again lying loose in the wound, and I removed it carefully. The mucous membrane had some days since extended entirely over the edges of the incision in the cheek, and, save that it was paler, it resembled the mucous border of the lips.

I only awaited his restoration to better health to pare the edges and unite them by sutures. Pulse 96 and strong.

19th. Had a chill during the night, followed by a very marked fever this morning. Pulse 140, and feeble; thirst very marked; tongue clean; lips of an almost waxy whiteness; wound and its discharge still healthy. Ordered liq. ammoniae acet. and spt. ath. nit. $\frac{aa}{5}j$, every three hours; quinina sulph. gr. iv ter die, and milk punch Oss five times a day, with one-half grain of morphia at night.

20th. Rather better; pulse 100, and rather feeble; no appetite; skin hot; wound healthy. 6 P. M. Pulse 120. His entire right side, including both body and face, had become paralyzed as to motion, but not as to sensation. Reflex action still existed; his speech was seriously impaired by paralysis of the right half of the tongue: but his bowels and bladder were not affected; neither vision nor hearing was at all impaired; nor was his mind apparently obscured.

22d. Pulse 120; skin hot; otherwise the same in general condition. Last night he had spasmoid convulsions, limited, the nurse told me, to the paralyzed side.

23d. Last night and again this morning had convulsions of the paralyzed side. He had also during the night a hemorrhage of about f5iss from the wound of ligation of the carotid, which, however, ceased spontaneously. His respirations were long, irregular, and laboured; eight to ten in the minute; pulse 118, and feeble; pupils somewhat contracted and but feebly susceptible to light; appetite pretty good, ate three tumblers of farina and milk this morning. His intelligence was still very good; for, after laborious but ineffectual attempts to speak to me, appreciating more than I supposed he could somewhat of the ludicrous in his attempts, he fell a-laughing so that he shook the bed.

24th. Had a convolution at 5.30 last night while I was present. It continued for an hour, and consisted in alternate contraction and relaxation

of all the flexors of the paralyzed side. He seemed to lose his consciousness; his head and eyeballs were thrown permanently to the right; the orbicularis palpebrarum, the elevators of the angles of the mouth, and the flexors of the upper and lower extremities all acted synchronously, and at about the rate of fifty or sixty contractions to the minute. But while apparently unconscious to intellectual impressions, physical impressions were conducted to the sensorium, and appreciated; and the left side was completely under his control; for while the right side was jerking, his nose being tickled on the right side, he scratched it with a perfectly steady left hand. The pupils were not markedly contracted, but were feebly sensible to light. He was this morning still conscious, though somewhat stupid. He had no delirium whatever, but lay generally very quiet; in the intervals pulse 135. Continued treatment.

25th. Had another convulsion last night, mostly confined to the right leg and lasting about thirty minutes. This morning he was still stupidly conscious; retained his sensibility on the paralyzed side; answered but "yes" and "no," which were hardly to be distinguished; skin hot; pulse 150.

26th. Died at 11 A.M. to-day: 56 days after being wounded, and 41 after the operation. Last night he refused to eat, and this morning he was perfectly unconscious. He died perfectly passive.

Post-mortem, twenty-four hours after death. Rigor mortis well marked; body very pale from loss of blood; muscular developments good.

Chest.—Some old adhesions were present on each side. *Lungs* healthy; their external surfaces covered with an extensive black deposit in many of the lobules, giving it a mottled appearance; but this did not exist on the opposing surfaces of the lobes. *Heart* had considerable fat deposited on its external surface, but none in its substance; on the anterior surface was also quite a large white patch. The walls were quite thin. *Tricuspid* and *mitral* valves somewhat thickened just above the free border, the latter having a small, cartilaginous deposit at the base of one leaf; the *aortic* valve had a slight thickening of one leaf and an enlargement of its *corpuscle of Aurantius*; but none of these changes were enough probably to interfere with the healthy action of the valves. *Pulmonary* valve normal. On the right side a firm clot existed, extending into the pulmonary artery. On the left side a number of small clots were found in almost fluid blood.

Abdomen.—*Liver* fatty in some small patches, but generally healthy. *Gall-bladder* full, but no gall-stones existed. *Kidneys* cut much harder than usual, and were quite pale. Cortical substance smaller than usual.

Brain.—On cutting through the dura mater a considerable quantity of rather thick pus was found, covering the anterior two-thirds of the left hemisphere, except that part in contact with the orbital plate, and an inch of the antero-superior surface. This pus was in the arachnoid cavity; and between the arachnoid and pia mater of the left side were cavities containing pus, and circumscribed by lymph, resembling abscesses. Another such abscess existed also on the surface of the lowest part of the posterior lobe of the same side. The pus in the arachnoid cavity also extended into the fissure between the hemispheres, but only on the left side. There were some deposits of lymph on each side, corresponding to the Pacchian bodies; and almost the entire posterior portion of the arachnoid and pia mater of the right side were elongated by deposits of lymph; otherwise the right side was healthy. The arteries of the left side were partially filled by the injection

(plaster of Paris), but they were smaller than those of the opposite side. The anastomosis had, undoubtedly, been imperfect, and the supply of blood insufficient in this hemisphere.

Substance of the Brain on Section.—On the right side in the anterior lobe of the hemisphere, one-half inch from the inner surface of the convolutions, and in the white substance, was an abscess, the size of a small nutmeg. The microscope showed its contents to be undoubtedly pus, but the cells were ill-formed and irregular in their development of nuclei under acetic acid. Except this abscess and four small hydatids in the choroid plexus, the entire right side was healthy.

Left side on horizontal section half an inch deep, presented a large abscess or rather a series of small abscesses communicating quite freely with each other, approaching the external surface anteriorly, but receding posteriorly; on a section of one and one-fourth inch it presents quite a large abscess immediately anteriorly, and a series resembling the last in the centre attacking, apparently, rather the gray substance, and undermining the white, which was partially destroyed; the remaining parts being shreddy. On section of about two inches, it presented a series of unconnected abscesses, eight in number, and of various sizes, almost totally confined to the external gray matter, the white being shreddy where it bordered on the abscesses. At the posterior inferior portion of the posterior lobe also were two or three abscesses confined, also, almost entirely to the gray substance. In fact nearly one-half of the entire left hemisphere consisted of abscesses. The corpora striata and the thalami optici, however, were healthy.

Carotid artery consolidated from within three-fourths of an inch of the aorta up nearly to its bifurcation, when it again became patent. At the point of ligature there were a few drops of pus in a cup-shaped cavity, and throughout its entire consolidated portion it appeared dark-coloured, as if degenerated and ready to slough away speedily. Some of the injection of plaster of Paris thrown into the aorta had passed over to the left side of the face and neck by the anastomotic vessels. The point at which the hemorrhage had taken place from the internal maxillary could not be found either by inspection or by injecting water into it, since the artery was rendered impervious, probably by clotted blood.

None of the nerves were injured. The arteries of the collateral circulation were generally somewhat enlarged, but the only one in which it was specially noticeable was the left profunda cervicis. The specimen has been forwarded to the Army Medical Museum, with the ballot.

The literature relating to the ligation of the carotid artery is already quite extensive, but there are some points, both of concurrence and difference in this case, when compared with the majority of other cases, which it may be useful to recall.

First. The time when the ligature came away— $4\frac{1}{2}$ days—is shorter than any case I have yet been able to find. In 73 cases given by Dr. Norris (*Amer. Journ. Med. Sci.*, July, 1847), where this time is stated, I find but five under 10 days, the shortest being one at 7 days, and the average being 18 days. This rapidity in the occlusion of the artery, while it aroused my fears of secondary hemorrhage at the time, showed in reality great reparative powers, and augured well for the recovery of the patient.

Second. The length of time—41 days—that he lived after the operation. In 89 fatal cases of which a *résumé* is given by Norris, by Dr. Norman Chevers (*London Med. Gaz.* New Series, vol. i. p. 1140, October, 1845), and by Ehrmann (*Des Effets produits sur l'Encéphale par l'oblitération des Vaisseaux artériels qui s'y distribuent*, Paris, 1860), the average date of death is $19\frac{1}{2}$ days. Twelve exceeded 41 days, 4 being over 100 days.

Third. There was no paralysis on the left side, although quite a large abscess existed anteriorly, in the white substance of the right lobe. This was certainly the case up to the night before his death.

The next morning he may have been paralyzed more or less on the left side, but he lay so quietly unconscious till his death that one could scarcely judge accurately of his condition.

Fourth. The cerebral effects. These were manifested both at the moment of operation, and again after an interval of 35 days.

The convulsions and syncope at the time of ligation were unquestionably due to the disturbance of the circulation in the brain, by the sudden withdrawal of so large an amount of blood on the left side, and an increased quantity on the right; and they are by no means uncommon. This is the second case of ligation of the carotid I have seen, both traumatic in their cause, and in both instances were such convulsions present.

In the first case paralysis of the opposite leg supervened immediately, and continued till death, twenty-four hours after.

Ehrmann states that the convulsions are usually more severe on the same side as the operation, and accounts for it by the intense hyperæmia of the opposite side of the brain, but I cannot say that I have noticed it in either of these two cases.

But the paralysis and convulsions occurring 35 days later were due to a very different cause, and one far more grave, viz., disorganization of the brain substance, as was shown by the *post-mortem*.

Students generally leave our medical schools with the idea that no special dangers attend the ligation of the carotid, and even surgeons of experience and reading often speak lightly of it. Sanctioned by the authority of Miller, S. Cooper, Sir Astley Cooper, and others, and encouraged by the positive statements of some writers, and by the silence of many others as to its dangers, they forget that nearly two-fifths of the patients die, while others live permanently crippled. In 284 cases, compiled principally from Norris, Chevers, and Ehrmann, I find 115 cases of death, or nearly 40 per cent. of the 115 fatal cases; the cause of death is stated in 88, and this cause is cerebral in 55. Besides these, 35 other cases are mentioned in which cerebral disorders (paralysis, &c.) occurred, but the patients recovered. The great danger, then, is that precisely such a result may follow as is illustrated in the present case, viz., whether the cure of the existing disease be effected or not, that the patient will live permanently paralyzed, or blind, or deaf,

or subject to vertigo, drowsiness, &c., or will die from softening, or even abscesses in the brain. I think, then, that it cannot be too strongly impressed upon those called upon to operate, that the risk to health and life is immensely increased in tying the common carotid, rather than the external, and I would even prefer to tie *both external* carotids, if thereby I could avoid the ligation of the common trunk. Hence, my judgment, on my own operation, after careful thought and considerable reading on the subject, is that it would have been better to tie the external carotid, and if hemorrhage had recurred, as it undoubtedly would have done, to tie the other external carotid; or, possibly, the second operation of plugging the antrum might have been made the original one with advantage. In either case the cause of death, as shown by the *post-mortem*, would have been avoided.

Usually the paralysis supervenes at a much earlier period after the ligation of the artery than it did in this case. In 90 cases, followed by cerebral disorders, I find the shortest time in which they appeared was a few minutes, and the longest 8 days, excepting in one case, when they first appeared 63 days after the operation, when the child was teething.

In 55 of these cases death followed; in 9 but little improvement, or none (and this seems specially applicable to disturbances of vision and hearing); the remaining 26 gradually improved, the paralysis, &c., more or less completely disappearing, usually in a few hours or days.

Sometimes hearing, sight, speech, deglutition, &c., were affected, but none of them were altered in the present case, save that speech was destroyed, although voice remained, the tongue being partially paralyzed, but the larynx unaffected.

The pathology of these cases, in the view of Dr. Ehrmann, is as follows:—

"If the vessels which communicate at the base of the cranium, the carotids with themselves and with the vertebrals, only offer a small calibre, the part of the encephalon corresponding to the artery ligated, will receive an insufficient supply of blood, its nutrition will be imperfect, and there will result a suspension more or less complete in its action on those regions of the body governed by it. Thus are explained those hemiplegia, almost always on the opposite side from that operated upon, which arise frequently but a short time after the operation, and disappear in a few hours or days under the influence of the regular re-establishment of the circulation, by the gradual dilatation of the anastomosing arteries."

"In those patients where this dilatation is not produced, or is not produced quickly enough, the collateral circulation is not re-established, or is established too late, and the cerebral tissue, deprived of blood, becomes disorganized. This alteration is moreover more rapid and complete, according as the patients, by reason of debilitating causes antecedent to the operation, are feeble and anaemic." p. 65.

With this we can fully agree; but his view of the pathology of those cases where the cerebral symptoms occur "at the end of a certain time" is not so satisfactory.

"In these cases," he says (p. 71), "it is not possible to call to our aid the direct influence of arterial anaemia. It is rational to admit, with Mr. Chevers, that they depend upon the action of the collateral circulation, which is established in the hemisphere on the side of the ligature, and from which there results a dilatation of its vessels, and an excess of pressure upon the delicate substance surrounding them, and that an imperfect nutrition disposes to a ready alteration."

But Mr. Chevers considers anaemia as the usual cause of their later cerebral lesions, and hyperæmia and concurrent pressure on the brain substance as an unusual, though possible cause. It is difficult, however, to admit its existence even as an exceptional cause. In some cases, it is true, we find dilatation of the vessels, and an apparent hyperæmia, with softening of the corresponding hemisphere. But the softening can hardly be the result of these, for it is difficult to imagine how and by what cause active hyperæmia and increased pressure can be produced, where the supply of blood, instead of being increased, is diminished, and where the current of the collateral circulation never exceeds, if even it equals, that furnished by the original channel. Even admitting their existence, they would be produced (*à fortiori*), first of all, and with the greatest force in the *opposite* hemisphere, where the cerebral lesions are never manifested, at least at a late date.

Such cases, then, as the present one can readily be accounted for, in harmony with the *post-mortem* results, by supposing persistent anaemia causing convulsions, &c., at the time of the operation, and resulting ultimately in softening. That the softening does not occur earlier can only be due to the resistance offered to the inception and progress of disease by the more or less robust health and vigour of the patient.

But where we find enlargement and apparent engorgement of the vessels, I suppose that the persistent anaemia results in nutritive changes in the brain substance, accompanied with more or less softening. The vessels, then, having lost the natural support given them by the brain substance, and probably being impaired in their own nutrition also, relax and dilate, and thus give rise to an apparent congestion, not active, but eminently passive in character, and totally unaccompanied with pressure upon the surrounding parts. In other words, the congestion does not precede and cause the softening, but follows it, and is in part caused by it.

It is greatly to be regretted that the term "paralysis," which is so indefinite, is so frequently used in scientific reports, where accuracy is desirable. Whether it applies to motion (the most readily perceptible to the medical attendant), or to sensation, or the sense of temperature, or of pain, is left to the unaided imagination of the reader.

In all the 31 cases of "paralysis," I find but 5 in which it is stated whether it extended to motion or sensation. In one, motion alone was affected, in 2 sensation alone, in 2 both.

The fact that the paralysis was unilateral, and not alternate (as it has

been aptly named by Dr. Gubler), is of interest, especially in connection with Vulpian's view of the origin of the facial nerve. (See Duchenne's *De L'Électrisation localisée*, p. 653 *et seq.*) He believes that after their chiasm on the floor of the 4th ventricle, they run forward, perhaps, into the crura cerebri. Any disease low down, then, would involve the 7th pair of the same side, but the motor roots of the opposite side of the cord, producing alternate paralysis; but if the disease were *high up*, it would involve the roots of the 7th pair of the opposite side as well as the motor roots of the opposite side of the cord, producing unilateral paralysis. I find but seven cases where it is distinctly stated whether the face was affected or not, and in three of them alternate paralysis existed. In one case no *post-mortem* was obtained, in one no change in the cerebral tissue was observed, and in the third, where hemiplegia of the left side existed, with "incomplete paralysis of the right side of the face" (Ehrmann, p. 37, Case VIII.), yellow softening of the right anterior cerebral lobe was found. This latter case would certainly militate against this theory (yet the commissure of the nerves of the 7th pair is generally admitted by anatomists), but it militates equally against the view of Mr. Gubler, that alternate paralysis is intimately concerned with lesions of the tuber annulare. We must conclude with Ehrmann that our knowledge of the site of the lesions producing alternate paralysis is too scanty as yet to enable us to arrive at positive conclusions. But the subject bespeaks from medical men accuracy of observation, both of the nature of the paralysis before death, and of the site of the lesion afterwards.

ART. III.—*Successful Ligation of External Iliac Artery for Traumatic Aneurism of the Femoral: with a Statistical Table, showing the results of the operation of tying the External Iliac Artery.* By JAMES B. CUTTER, M. D., Acting Assistant-Surgeon U. S. Army.

GEORGE CLARK, private 4th New Jersey, Co. I, a large muscular man in vigorous health, whose average weight is 200 lbs.

The following is a history of the case: Eight years ago he accidentally plunged the large blade of a pocket-knife into the inner side of the left thigh, about two inches below Poupart's ligament, the blade entering the femoral artery near the origin of the profunda. The wound healed rapidly, and in one week from the time he received his injury, he resumed his usual occupation (that of a farmer). He informs me that he never experienced any pain or difficulty after his recovery, except a prickling pain at the wounded point upon unusual or excessive walking, until last August, while in the United States service.

In the latter part of August, 1863, was in the "Field General Hospital" at Warrenton, Va., his trouble, so far as I can learn, being extreme pain, located in the lower part of the abdomen; this pain was of a dull aching

character, and continued some two weeks; he recovered perfectly; was ordered to report to his regiment, which was stationed at the distance of about half a mile; he started on foot, and reached his destination at 10 o'clock A. M., Sunday; did not go on duty, but went immediately to his tent, and there remained.

About 12 o'clock M. of that day the fact that his left calf was increasing in size attracted his attention; at 12 M. on the following day, just twenty-four hours after his first perceiving the swelling, the thigh, leg, and foot had reached their greatest dimensions. Circumference of left thigh 32 inches, right 20 inches, leg in proportion. On the following day was present at "sick call," saw the regimental surgeon, and stated to him the above facts; the surgeon directed the limb to be bandaged, and the patient to enjoy *perfect rest*. Remained with his regiment five days, was then transferred back to General Hospital, at Warrenton, Va.

The patient states that, after reaching General Hospital, he suffered the most agonizing pain in the inner side of the left thigh, directly over his former wound; this pain continued three or four days without intermission. The treatment he received while in hospital was simply bandaging of the limb, and keeping it in the flexed position.

He was transferred from the above-named hospital to Washington, D. C., and from thence to the "Newark General Hospital," Oct. 13, 1863. When admitted, the whole limb was greatly enlarged, with remarkable distension of cutaneous veins. While in this hospital he has been examined by several surgeons of eminence and position, none of whom had a suspicion of aneurism of the femoral artery, some supposing there might be a tumour within the pelvis, causing pressure upon the iliae vein. He never complained of pain in the region of the aneurismal tumour, except for three or four days at General Hospital, as above mentioned, and could never recall any circumstance that would be likely to give rise to such a condition of the limb. The patient came under my observation Dec. 26, 1863, and was made the subject of *special study*.

I interrogated him repeatedly about his previous life and habits, about every accident that ever happened to him, no matter of how trivial a character it might seem to be; finally, after much labour, I had the gratification of recalling to his mind the accident that happened to him eight years ago. After ascertaining this fact, my attention was directed to aneurism, and upon placing my ear upon the small scar so distinctly marked upon the thigh I had the satisfaction of recognizing the tumour to be aneurismal, 1st, by its peculiar thrill on firm pressure with the hand, and, 2d, by the "aneurismal bruit" when the ear was applied to the tumour.

After my diagnosis was made, the patient was examined by Dr. George Taylor, surgeon in charge, and some members of the medical staff of this hospital, and my diagnosis confirmed; the patient was just previous to the operation examined by my former preceptor, Dr. J. C. Hutchison, Prof. of Surgery in the Long Island College Hospital, Brooklyn, and Dr. Abraham Coles, of this city, who also confirmed my diagnosis.

Through the kindness of my much esteemed friend, Dr. Geo. Taylor, Surgeon U. S. Army, in charge of the hospital, I was permitted to operate.

After the usual preparatory treatment, on Saturday, Feb. 6, 1864, at a quarter to 3 P. M., the patient was placed upon the operating table and anaesthesia produced by a mixture of two parts ether and one part chloroform, and the operation performed in the following manner:—

The patient being placed in the recumbent position, the abdominal muscles relaxed, an incision was made about five inches in length, commencing just outside of the external abdominal ring, and extended in a curved direction outwards and upwards, nearly parallel with Poupart's ligament, terminating about an inch above, and to the inner side of the anterior superior spinous process of the ilium; the three layers of abdominal muscles and transversalis fascia were then cautiously divided, the peritoneum separated from the iliac fossa, and carefully pushed towards the pelvis, and there retained by the hand of my careful assistant; on introducing the finger to the bottom of the wound, the external iliac artery was felt pulsating in its normal position, its sheath was then opened to a small extent, and the plain aneurismal needle passed between the vein and artery, and the latter secured by a strong ligature with three knots; the sides of the external wound were then brought into nice apposition, and secured by eight silk sutures, and dressed as is usual in wounds of this character. I should here state that upon making the incision through the integument, the venous hemorrhage was enormous, and it was remarked by Dr. J. M. Minor, of the Brooklyn City Hospital, whose experience and observation are extensive, that it was the most abundant venous hemorrhage from the *integument* that he ever saw; it was also remarked by other surgeons present. The characteristic feature of this venous hemorrhage was that it seemed to be confined almost exclusively to the integument from the entire cut surface of which it flowed as if from a sponge in a *continuous* and *copious* stream, retarded slightly (controlled it was not) by firm pressure. This is in a measure explained by the probable obstruction of the femoral vein by the aneurismal sac, forcing the venous circulation into the cutaneous veins.

I must here state that I was very kindly and ably aided by Dr. Minor, whose skill and good judgment were of great assistance to me. I can safely say that had not this patient been a man in *perfect* health, and with great constitutional vigor, the loss of such an amount of blood would have rendered the result of the operation more than doubtful.

What is surprising is that, notwithstanding the loss of such an amount of blood, the pulse of the patient continued good throughout the operation; all pulsation ceased in the tumour upon the application of the ligature followed by lowering of temperature, and diminution in size of the limb. Beef-tea and egg-nog were administered pretty freely; warm applications were made to the limb.

5 o'clock P. M. (one hour after the operation). Pulse of the patient much improved; is a little uneasy and restless. 6 P. M. Patient has changed his position; considerable oozing of blood from the wound; required the patient to keep *perfectly quiet*, informing him of the importance of conforming to my orders in this respect; ordered pil. opii to be repeated in the course of an hour or two if he complained of pain, or was at all restless.

Sunday.—Patient slept until 5 o'clock this morning; has been uneasy since; removed external strips of adhesive plaster and lint, wound looking well; no discharge. The temperature of the limb being perfectly restored, the warm applications were removed. This rapid restoration of temperature would seem to indicate that the collateral circulation had been established with unusual rapidity, owing probably to a certain amount of enlargement of the collateral vessels, produced by the long-continued retardation of the current of blood through the aneurismal sac.

Wednesday, 10th. Up to this date the patient has been doing remark-

ably well; corners of the wound to the extent of three inches have united by first intention. Bowels have acted once to-day; passed a great deal of flatus, which has given him much relief; pulse 100; tongue clean; appetite *good*.

11th. The bowels have acted freely, and the patient is very comfortable. The wound looks well, and continues to discharge quite freely; pus of a very healthy character.

13th. Pulse 120; tongue clean; appetite good; bowels have acted once this morning; evacuation not copious. Began the administration of the tincture of veratrum viride gtt. iv, increasing gtt. j, at each dose.

14th. Pulse reduced to 80. Patient doing well.

18th. Up to this date the patient is, and has been doing remarkably well. The limb is *very much* reduced in size, and the superficial veins have almost disappeared.

23d. Doing *very well*; appetite still good. Have discontinued the use of the tinct. veratrum viride, and have begun to give more nutritious diet, with stimulants and tonics.

Feb. 28th. Doing well, has been since last note; sleeps well at nights; no pain; appetite still good; pulse 100; wound closing kindly.

29th. Doing well.

March 2d, 25th day of the operation. Ligature separated this morning; no hemorrhage.

7th. Has been doing well; appetite good; tongue somewhat furred; pulse 110 to-day for the first time since the operation; has been allowed to sit up in bed.

14th. Has not been doing so well since last note; had had occasion to go to stool two or three times daily for the last two days; tongue thickly coated; appetite not so good. Ordered mass hyd. gr. v to be taken in the evening; cathartic to be taken on the following morning.

15th. Same to be repeated.

16th. Much improved; appetite returning.

17th. Tongue clean; bowels quite regular; appetite much improved; expresses himself as feeling much better.

April 11th. Wound has closed, leaving firm, hard cicatrix. Patient's general health *good*; sits up every day an hour or more.

18th. Patient still improves; this morning walked the length of his ward on crutches.

25th. Patient moves about every day from one ward to the other; expressed himself to me this morning as "never having felt better in his life." There is considerable œdema about the hip, which is gradually disappearing.

· *Résumé*.—This case presents some points of interest which I will briefly allude to.

1st. A wound of the femoral artery near the profunda, followed by profuse hemorrhage, heals up so rapidly as to enable the patient to return to a laborious occupation in the space of a week.

2d. Eight years expire before he experiences any inconvenience from it, except a pricking sensation at the seat of the wound, when making any unusual exertion in walking.

3d. Without any immediate assignable cause, the calf of the leg becomes

swollen, followed by enlargement of the whole limb, in the short space of twenty-four hours.

4th. At first sight it might appear remarkable that a correct diagnosis was not sooner made. This, however, will not be wondered at, in view of the fact of the steady denial of the patient, when previously interrogated, of his ever having received any injury or wound, he always supposing the questions to have reference to wounds received in action, he never having been wounded in battle. When, however, he is very closely interrogated, reveals the fact of the wound received eight years before; attention being now drawn in the right direction, the cicatrix is discovered, and a correct diagnosis of course at once easily made out. Up to this time, the tumefaction of the limb and enlargement of cutaneous veins were attributed to obstruction of deep-seated veins, either from phlebitis, or a tumour within the pelvis, obstructing the iliac vein. Venous obstruction certainly existed, but was a *consequence*, and not a *cause*, of the trouble; a tumour (the aneurismal tumour) was indeed the cause of the disease, but was in the thigh itself, and not in the pelvis.

5th. This rapid enlargement of the limb (attaining its largest dimension in twenty-four hours from first appearance) is interesting, as seeming to indicate a proportionately rapid enlargement of the aneurismal sac, and probably that the cicatricial tissue at the seat of the original wound gave way, producing a false aneurism, for we may not suppose that a true aneurism could be formed in so short a space of time sufficient to obstruct so completely the femoral vein.

Finally, it may be asked, What was the cause of this sudden giving way in a part which had for so many years remained firm and sound? We may attribute it to two causes.

1st. To the vicissitudes and hardships of campaigning life; to irregular, unchanging and indifferent food, impairing the vigour of his nutritive function, as compared to what it had been in the quiet regularity, moral and physical, of a farmer's life, with wholesome and varied articles of diet; and, 2d, to attacks of intermittent and typhoid fever, from which he had suffered at different times, leaving the tissues doubtless in a condition more or less dyscrasie, as compared to what they had been previously.

In preparing the following table, I have carried out to a certain extent the ideas of Dr. Norris, of Philadelphia, who published in the *American Journal of the Medical Sciences* for Jan. 1847, a complete table, showing the mortality following the operation of tying the iliac artery, either for aneurism, or the arrest of hemorrhage; it includes, so far as is known, all of the recorded cases up to that year, and it is considered a valuable table and one frequently referred to.

I have but attempted to add to the statistics already collected.

Of 118 cases collected in Dr. Norris's table 85 recovered, and 33 died.

Of 113 cases in which the sex is noted, 107 were males, and 6 females.

Of 79 cases in which the site is noted, 44 were on the right, and 35 on the left.

Of the 118 cases operated upon, 2 were traumatic, 95 spontaneous, 18 in consequence of wounds or secondary hemorrhage, and 3 for varicose aneurism.

Hemorrhage is stated to have occurred in 14 cases ; of these 7 died, and 7 cured.

Gangrene occurred in 16 cases out of the 118, 3 of which were cured after amputation, and 12 died.

Out of the 118 cases, 33 died : 6 from hemorrhage; 3 from sloughing of the sac; 13 from mortification of the limb; 1 from bursting of the aorta ten weeks and six days after the operation; 2 from prostration; 2 of peritonitis; 2 of tetanus; 1 from disease of the heart; 1 from delirium tremens; 1 of diffuse inflammation; 1 not noted.

Mortality.—Of 35 cases included in the following table 20 recovered, and 13 died. In two instances, Nos. 3 and 9, the result is not stated.

Sex.—In 34 cases in which the sex is noted, 31 were males, and 3 females.

Age.—Age is noted in 29 instances, in which there were above 80 years, 1; between 60 and 70, 1; 50 and 60, 2; 40 and 50, 2; 30 and 40, 11; 20 and 30, 11; below 20, 1.

Right or Left Side.—This is noted in 30 cases, of which there were 19 on the right side, and 11 on the left side.

Disease or Injury.—In 33 cases in which the disease or injury is stated, 22 were spontaneous aneurisms; 7 traumatic aneurisms; 1 wound of external iliac; 1 pulsating tumour of thigh (recurrent).

Period the Ligature Separated.—This is noted in 22 instances. In 8 cases the ligature separated before the 20th day; 6 between the 20th and 30th; 2 between the 30th and 40th; 5 beyond the 40th. The 13th was the earliest day at which the ligature separated, and 50th was the longest period at which it remained.

Hemorrhage after the Operation.—This occurred in 5 cases, all of which proved fatal, with the single exception of Wood's case, which was cured by pressure continued 47 days.

Gangrene of the Limb.—This occurred in 3 cases, all of which died, one undergoing amputation of the thigh.

Out of 33 cases, of which the result is known, 13 died : of these, 3 died of hemorrhage; 1 from pleurisy; 3 from gangrene; 3 from peritonitis; 1 from pelvic abscess; 1 from air in the veins; 1 from exhaustion.

Statistical Table showing the Results of Operations

No.	Surgeon.	Sex M. F.	Age A.	Right or left side.	Disease.	Duration of disease.	Ligature separated.	Date of Operation.	Result.
1	Cocks	M.	46	Right side	Spon. aneurism	2 months	50th day	Nov. 1, 1847	Cured
2	Fergusson	"	36	Left side	" "	12 months		Nov. 17, 1855	Died
3	Solly	"	30	Right side	" "	4 years	26th day	Feb'y. 1854	
4	Cocks	"	26	"	" "	1 month	15th day	Nov. 23, 1858	Died
5	Brooks	"	57	"	" "	2 years	46th day	Feb. 13, 1856	Cured
6	Fletcher	"	50	"	" "	6 months		Sept. 12, 1852	Died
7	Furner	"	30	"	" "	3 months	16th day	Sept. 11, 1858	Cured
8	Lidell	F.	33	"	" "	1 month	40th day	Oct. 4, 1856	Cured
9	Skey						16th day	Feb'y. 1854	
10	Erichsen	M.	64	"	" "			Aug. 3, 1861	Died
11	Hamilton, F. H.	"	44	Left side	Trau. aneurism	6 weeks	27th day	Sept. 19, 1856	Died
12	Wood, J. R.	"	22	"	" "	33 days	13th day	Dec. 8, 1855	Cured
13	Castro	"	20	"	Spon. aneurism	1 year	35th day	April 10, 1849	Cured
14	Fox	"	21	Right side	" "	4 months	17th day	Oct. 11, 1849	Cured
15	Smith	"	37	Left side	" "		29th day	Aug. 7, 1855	Cured
16	Halpin	"	21	Right side	" "			Sept. 12, 1851	Died
17	Ogden	"	26	"	Wound of ex- ternal iliac			Nov. 14, 1825	Died
18	Denne	"	30	Left side	Spon. aneurism	1 month	29th day	May 9, 1847	Cured
19	McNeil	"	27	"	Trau. aneurism	23 days	49th day	Dec. 30, 1854	Cured
20	Miller	"	"		Spon. aneurism	3 months	21st day	Jan. 14, 1854	Cured
21	Van Buren	"	25	Right side	" "	5 months	17th day	Aug. 17, 1848	Cured
22	Mott	"	21	"	Arterio venous	2 years		Dec. 16, 1846	Died
23	Cooper, E. S.	"	"		Trau. aneurism				Cured
24	Wood, J. R.	F.	26	Left side	Spon. aneurism	1 month		Dec. 17, 1859	Died
25	Daret	M.	86		" "			June 19, 1812	Cured
26	Wood, J. R.	"	31	Right side	" "	3 months	13th day	Feb. 25, 1860	Cured
27	Wood, J. R.	"	"		" "				Cured
28	Mercier	"	30	"	" "	18 months	13th day	Sept. 9, 1856	Cured
29	Wedderburn	"	"		" "				Died
30	Cutter, J. B.	"	23	Left side	Trau. aneurism	5 years	25th day	Feb. 6, 1864	Cured
31	Gibson	"	45	"	Spon. aneurism		21st day	July 2, 1848	Died
32		"	"	Right side	Trau. aneurism			1845	Died
33	Buck	"	38	Left side	Hemorrhage af- ter ligation of femoral			Feb. 23, 1848	Died
34	Buck	"	37	Right side	Spon. aneurism	6 weeks			
35	Halsted	F.	37	"	Pulsating fibro- recurrentum.	14 months	32d day	Aug. 7, 1858	Cured
								April 23, 1864	Died

for Tying External Iliac Artery performed since 1846.

Period of death	Cause of death.	Work.	Remarks.
		Edinburgh Med. and Sur. Jour. Vol. 1, 1848	
6th day	Pleuritis	Med. Times & Gaz., Vol. 2, 1858 Med. Times & Gaz., Vol. 1, 1851	On the 50th day an attempt was made to bring away the ligature by force; it broke leaving the knot in the wound.
31st day	Hemorrhage	Med. Times & Gaz., Vol. 1, 1858 Lancet, 1856	
30th day	Air in veins	Brit. Med. Jour., Vol. 2, 1862 Med. Times & Gaz., Vol. 1, 1858 Med. Times & Gaz., Vol. 1, 1858	There were doubts as to the cause of death.
36th day	Pelvic abscess	Med. Times & Gaz., Vol. 1, 1854	Dr. Stephen Smith tied the primitive iliac on the same patient in 1858 for a return of the disease. Died of hemorrhage.
32d day	Gangrene	Lancet, Vol. 2, 1861 Buffalo Med. Jour., Vol. 12, 1857	When reported was under treatment.
		Am. Jour. Med. Sci., 1849 Am. Jour. Med. Sci., 1849 Am. Jour. Med. Sci., 1851	Oct. 16th the thigh was amputated just above its middle; died fifth day after.
9th day	Hemorrhage	Am. Jour. Med. Sci., 1851	Five days after the ligature separated, hemorrhage supervened, pressure by the hand was kept up 12 days, and by shot weights 35 days.
5th day	Hemorrhage	Am. Jour. Med. Sci., 1853	
		Association Med. Jour., 1853 Am. Jour. Med. Sci., 1856 Association Med. Jour., 1854	Two years after the femoral of the opposite limb was successfully tied for popliteal aneurism.
6th day	Gangrene	N. Y. Jour. Med., Vol. 2, 1849 N. Y. Jour. Med., Vol. 2, 1849	Hemorrhage caused by sloughing bubo opening the aneurismal sac.
4th day	Peritonitis	N. Y. Jour. Med., Vol. 3, 1857 N. Y. Jour. Med., Vol. 3, 1860 N. O. Med. & Surg. Jour. Vol. 3 N. Y. Jour. Med., Vol. 2, 1849 Not reported	Six days after the ligature was applied the limb mortified.
11th day	Gangrene	N. A. Med. Chir. Rev. Vol. 2, 1858 N. O. Med. & Surg. Jour. Sept. '46	The ligature was placed very near the bifurcation of the external and internal iliac arteries. Ascertained after death. The patient died of phthisis 2 or 3 years after.
		Monthly Retrospect, 1848	
2d day	Peritonitis	Guthrie's Commentary on the Surgery of the War	
	Exhaustion	Not published	
	Peritonitis	Not published Not published	

ART. IV.—*Aneurismal Tumour of the Orbit—Recovery.* By E. L. HOLMES, M. D., of Chicago, Ill., Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon to the “Chicago Charitable Eye and Ear Infirmary.”

P. M., a printer, aet. 23 years, from Beloit, Wisconsin, consulted me on the 24th of last September, and gave the following history of his case:—

On the 9th of last August he received in the left side a charge of No. 5 shot from an ordinary fowling-piece. More than one hundred shot penetrated the integument, some of which entered the left kidney and lung, and possibly other organs. Several shot struck the side of the head, at least two of which entered the *left eye*.

Previous to this, the patient had enjoyed perfect health. As a result of the accident, there was much general prostration, attended with pain in the lumbar region, a discharge of bloody urine, expectoration of blood, considerable dulness on percussion over the lower half of left lung, and distinct râles in the same region. Vision of the left eye was at once destroyed.

The severe renal and pulmonary symptoms entirely subsided in three or four days, and in three weeks the patient had so far recovered as to commence his ordinary duties. At this time he first observed a slight protrusion of the *right eye*, with œdema of the lower part of the ocular conjunctiva, and soon after noticed a peculiar blowing sound in the *right side of the head*. The patient's general health was again impaired by an attack of “biliary fever,” during which the protrusion of the right eye and the œsophagus became more marked.

At his first visit, I found him very feeble, pale, with a weak pulse of 112, without appetite, and suffering from diarrhoea. The kidneys and lungs were in a normal condition. The left eye presented the following appearances: There was complete paralysis of the levator of the upper lid; conjunctiva congested; cornea normal; iris discoloured; pupil much contracted, filled with lymph, and drawn upwards to the sclerotic; the globe was slightly atrophied, but not painful, except on pressure. On raising the upper lid, a small tuft of granulations could be seen, just behind the upper edge of the cornea, apparently surrounding a fistulous opening through the sclerotic. I did not explore this portion of the eye, since manipulation and pressure caused considerable pain. There were two cicatrices in the external part of the sclerotic, and two in the upper lid, which last did not correspond with the two former. The patient could give no satisfactory account regarding the position of his head when the accident occurred.

The *right eye*, which, for three weeks after the accident, had shown no evidence of injury, was so far protruded from the orbit as to prevent closure of the lids. The conjunctiva of the globe, at its upper part, was somewhat œdematosus; the lower and inner half so much so as to conceal the edge and cilia of the lower lid. The cornea was turned a little upward and outward, and was almost absolutely fixed in this position. The upper lid was slightly œdematosus; its motions were merely sufficient with effort to cover the upper half of the cornea. The cornea, although it had been thus exposed for several weeks, retained its transparency; the iris

and pupil were normal ; vision was perfect, except at times, when obscured by the presence of mucus. There was some tendency to photophobia, which induced me to omit any ophthalmoscopic examination of the eye. No pulsation of the eye could be discovered by simple inspection. Moderate pressure, however, with the fingers upon the upper lid revealed pulsation ; it could not only be felt, but seen, by the motion of the eye and fingers. By placing the ear over the eye or over the temple, a very loud souffle was heard, which was described by the patient himself, and by several physicians, who listened to it, as wonderfully resembling the puffing of a high-pressure steam-engine, as heard at a distance. Pressure upon either common carotid did not entirely arrest the pulsation, although pressure upon the right artery so far reduced it, that it could scarcely be perceived. There were no evidences of disease of the heart or of the thyroid gland.

In view of the symptoms above mentioned, I considered the disease as an aneurismal tumour of the orbit, and was sustained in this opinion by several medical friends. I am in doubt regarding the precise form of aneurism. There is reason to believe that one or more shot passed transversely through the tissues of the left orbit, behind the upper part of the nose into the right orbit, wounding the ophthalmic artery, or some of its branches. The use of stimulants and tonics for two weeks very much improved the patient's health.

The probable presence of one or more shot in the left globe, as indicated by the persistent congestion and pain on pressure over the ciliary processes, in connection with the irritation, already existing in the right eye, led me to fear the development of sympathetic ophthalmitis in the latter. But as the left eye had been constantly improving, I concluded to postpone surgical interference with it. Although I suspected the existence of a more extensive communication between the deeper vessels of the conjunctiva and those of the orbit than in health, I thought a superficial scarification of the lower part of the conjunctiva might relieve the oedema and congestion. I therefore made a few very superficial incisions through the epithelium with a Desmarres' scarifier. After the loss of somewhat more than an ounce of blood, I arrested the hemorrhage by a small compress, which I directed the patient to hold in place for an hour with his finger. I had left the house but a short time before the patient, being left alone, fell asleep in his chair. His nurse, on entering the room an hour after, found him still asleep, with the blood flowing rapidly upon the floor. I was informed that more than a pint of coagulum was taken from his clothing and from the carpet. A compress, held in place by a band around the hand, prevented a recurrence of the hemorrhage. The patient was very faint and thirsty from this loss of blood, but soon recovered his strength. Apparently neither benefit nor injury resulted from the scarification.

As ergot is sometimes known to reduce the frequency and force of the heart's contractions, and to decrease the amount of blood in the capillaries, I determined to administer this remedy. Prof. D. Brainard, whom I had requested to examine the case, urged the trial of veratrum viride before resorting to any surgical operation. With his approval, I combined the two remedies, commencing Oct. 7th with five drops of the tincture of veratrum viride every three hours, and a teaspoonful of Tilden's fluid extract of ergot four times a day. At the same time I prescribed a plain nutritious diet.

The patient soon complained of nausea, which was controlled by diminishing the dose of the veratrum. The pulse, which had already, as the

patient's health improved, been reduced to 98 per minute, was soon reduced to 40 beats a minute. It was difficult, however, on account of nausea, to keep it below 50. The patient was directed to remain very quiet, and to avoid sudden motions of the body.

For nearly two weeks no perceptible change was observed in the eye, except the presence, for two days, of a second sound, in connection with the primary souffle, which last had gained, if possible, in distinctness, by the slow action of the heart. This second sound resembled the sharp whistle sometimes heard in the smaller bronchi. The large doses of ergot seemed to have no disagreeable effect. At the end of the second week the exophthalmos, as also the chemosis, began to subside. The souffle became less distinct to the patient himself, and to the auscultator. All symptoms gradually improved, and on the 31st of October the patient returned home, with directions to continue the treatment. Several weeks since I received a letter from his physician, my friend Dr. C. J. Taggart, of Beloit, stating that under his care the patient continued the remedies three weeks; vision and motions of the globe and lids were perfect; neither pulsation nor souffle could be detected, and that nothing abnormal could be discovered in the eye, except a very slight congestion of the conjunctiva.

The left eye is still somewhat tender upon pressure, although it is improving, as regards congestion and motion of the upper lid.

Whether the patient's recovery is due to the remedies prescribed, or independent of them, I am unable to say.

In connection with this report, I wish to give a short history of a case, in some respects similar to the one just related, which I saw in March, 1855, at both the clinics of M. Desmarres and of M. Nélaton. Probably very few physicians in this country have read the account of it which was given at the time in the French medical journals.

I quote from my note-book.

Paris, March 7, 1855. Clinique of M. Nélaton. A young man 23 years of age accidentally received on the evening of January 2d a blow from the end of an umbrella. The wound was situated near the outer angle of the *left* eye, and upon the lower lid. There was considerable hemorrhage both from the wound and from the nostrils. The patient was thrown down, but not rendered insensible. He at once perceived that the *right* upper lid (levator muscle) was paralyzed. Eight days after, there was considerable projection of the *right* eye. At times there was hemorrhage from the *right* nostril. At present, the *left* eye is normal in every respect, but the *right* globe is much protruded, and turned outwards; pupils dilated; vision quite good; diplopia marked; upper lid still paralyzed. Auscultation reveals a very distinct bruit de souffle, which ceases upon compressing the right carotid. Diagnosis—anerism of ophthalmic artery. Treatment—compression of the right carotid.

Soon after this, March 19th, I removed from Paris to Vienna. The following is an extract from a letter written to me in Vienna by the late F. Everts, M. D., whose acquaintance I had enjoyed for a short time in Paris.

Paris, May 26, 1855.

"The patient wore an instrument—a kind of tourniquet, used by M. Nélaton for compressing the carotid—from time to time, from the fourth

to the eighth of April, it being necessary to remove it several times to make some alterations. On the evening of the 8th it was reapplied, but at 4 o'clock the next morning the patient removed it on account of pain. Soon after he got up from his bed and smoked his pipe. At 7 o'clock he was taken with hemorrhage from the mouth and nostrils, and in spite of all that could be done, he died in a few moments.

"The *post-mortem* examination showed that an aneurismal varix had been produced between the internal carotid and cavernous sinus of the right side, where they are in such near juxtaposition, by a spicula of bone which had been driven before the end of the umbrella staff. Before entering the artery, this spicula of bone had divided the third pair of nerves, thus giving rise to the paralysis of the upper lid. It was the bursting of the distended cavernous sinus which gave rise to the hemorrhage and death."

I am aware how imperfect, in several very important points, are these extracts from my note-book, and from the letter of my late friend; and yet the few facts above related in connection with my own case are not wholly without interest.

ART V.—*Successful Case of Double Ovariectomy—One hundred and thirty-five Injections made into the Peritoneal Cavity during seventy-eight days.* By E. R. PEASLEE, M. D., LL. D., New York.

THE subject of the following operation is Mrs. E. H., of Thetford, Vt., 39 years of age, of nervo-sanguineous temperament, and the mother of two healthy children.

She first felt pain in the uterine region, on stooping or lifting, in August, 1860. This gradually increased, and soon a gradual enlargement of the lower part of the abdomen, simulating pregnancy, was also observed. Previously to the above date, her health had been good. The outline of a tumour was first noticed by her in February, 1862, and Dr. Niles, of Post Mills, Vt., saw her the following April, and recognized it. At this time she was as large as if at the end of pregnancy; the distension was marked, and locomotion occasioned so much pain that she was for three weeks confined to her bed. On the first of May she came under the care of Dr. E. C. Worcester of Thetford, Vt., who diagnosticated a tumour of the right ovary with ascites, and his treatment, directed to the improvement of her general health, was so successful that she was able frequently to ride out during the summer ensuing.

She first consulted me in regard to the removal of the tumour in September, 1862. As her general health was now good, I advised a continuance of the course Dr. W. had pursued, with tapping when circumstances might demand it; the idea of ovariectomy to be deferred for the *present*, though, since the tumour was polycystic, a cure by any other method was out of the question.

She was first tapped by Dr. W., November, 1862, on the median line, low down, and three quarts only of dense albuminous fluid were obtained. After this diuretics acted well, and the remaining fluid, although of large

amount, was diminished very rapidly, so that she could very soon wear her clothes of the ordinary size. Her appetite was now good, and her health improved till February 1st, 1863, when the fluid began to reaccumulate, and so rapidly, that on the 23d of the same month tapping became again necessary, and twenty pounds of fluid were evacuated. She then became able to superintend her household affairs until the middle of April, when the fluid again rapidly increased, compelling another resort to paracentesis for temporary relief on the 2d of May, when twenty-four pounds were drawn off. Succeeding this was an attack of very severe, incessant pain in the right side, over the region of the, now, very large tumour. This lasted nearly seven weeks, and was, doubtless, caused by the peritonitis, which produced the extensive adhesions hereinafter described. On June 20th, twenty-five pounds of fluid were drawn off, and on the 25th of July and the 10th of August, about the same quantity.

I visited her on the 24th of August, and after tapping the largest sac (on the left side), and removing twenty-six pounds of light amber-coloured and very highly albuminous fluid, I confirmed my previous diagnosis—a large polycystic tumour with extensive adhesions.

The patient was determined to have the tumour removed. I explained to her the danger of ovariectomy in the most favourable circumstances, and told her of the increased risk from the very extensive, and probably very firm adhesions, the existence for several years past of an irreducible umbilical hernia, and the thickness of the subcutaneous adipose tissue of the abdomen. I added, I very much doubted if the operation could be completed, if I attempted it. To all this she replied: "I must die without the operation within a few months at longest; I have for a year thought of all the risks, and have decided to take the only remaining chance of life." She begged I would attempt the operation, and complete it if possible; and, with the understanding that I should arrest it at any point beyond which I might choose not to proceed, I consented to attempt the extirpation of the tumour, on the 3d of September, 1863, at Hanover, N. H., where I was to remain four or five weeks, and to which place she rode (15 miles), on the 1st.

On the morning of the 2d, she took $\frac{5}{4}$ j. of castor oil, which produced a thorough evacuation of the bowels. She took only milk-porridge as nourishment for the two days before the operation. Her circumference was now 51 inches.

Operation, September 3, 1863.—The operation was performed in the presence of Dr. E. C. Worcester, Thetford, Vt., Dr. J. A. Smith, Hanover, N. H., and Drs. How, Chapin, Little, and Pingry, my pupils.

The atmosphere of the room being kept moist by the evaporation of boiling water, and at 78° Fahr., the artificial serum¹ being ready, and the patient's bladder being previously evacuated, she was placed on the table a little before 4 P. M., and the sulph. ether administered. The latter, however, produced sickness and retching, so that the operation was not commenced till a quarter past four. The day was fair and warm.

I first made an incision in the linea alba, four inches long, extending downwards from a point two inches below the umbilicus, and found the adipose tissue even thicker than I had expected—not less than two inches. The bleeding was very free, and I was obliged to wait fifteen minutes before

¹ Composed of chloride of sodium $\frac{5}{4}$ iv; albumen (white of eggs) $\frac{5}{6}$ vi; water Oiv—for moistening the hand before introducing it into the peritoneal cavity.

it could be arrested, so that I might open the peritoneal cavity; for it must be recollect that I scarcely expected to be able to complete the operation, and, therefore, proceeded in such a way that I might arrest it at any moment with the least possible subsequent risk to the patient.

On dividing the abdominal aponeurosis, I found the subperitoneal layer very thick and vascular, precisely resembling a muscle to the unaided eye. Here again I was delayed by free bleeding, which ceasing, I opened through the peritoneum to the extent of two inches; this membrane also being very thick and red, and bleeding freely.

The finger being introduced into the peritoneal cavity, came at once upon adhesions, and on enlarging the incision and introducing the whole hand, I found, first, that the great omentum being adherent to the umbilicus (at the seat of the umbilical hernia), covered the whole mass everywhere, in front, above that level, and was everywhere firmly adherent to it; second, that being compressed between the tumour and the anterior abdominal walls, it had become extensively adherent to the latter also, and was very thick and vascular (hypertrophied). There were no adhesions, however, in the pelvis, nor to the liver.

Since to complete the operation in these circumstances would necessitate a good deal of hemorrhage at the time, from the numerous and enlarged vessels of the omentum, and which might not be effectually arrested by any number of ligatures I might apply, I hesitated to proceed further, until after a thorough examination.

Up to this time the operation had been merely *explorative*, and $1\frac{1}{2}$ hour had passed before my decision was fully made. I now introduced the right hand, and began to detach the omentum from the ovarian mass. The adhesions were so firm, that it required all my strength to overcome them, and such a copious hemorrhage ensued, that it became evident that I must enlarge the incision, and be enabled to see the adhesions to be overcome. Besides, I could not remove the tumour through the opening, though diminished by tapping the two largest sacs, and removing six quarts of fluid. I therefore extended the incision to 6 inches above the umbilicus, (thus making it twelve inches in length,) and then broke up the remaining adhesions. And since the vessels ruptured could not otherwise be reached, the adhesions of the omentum to the parietes were also overcome, and the omentum thus made free on both surfaces. I next passed a double ligature (three threads of saddler's silk, waxed, but not twisted) through the pedicle, inclosed each half in half of the ligature, divided the pedicle and removed the mass, it being the left ovary that was thus enlarged.¹ On examining the right ovary, it also was found to be similarly diseased, and of the size of a pullet's egg; and this was also removed in the same manner.² It was now $6\frac{1}{2}$ o'clock.

The next step of the operation was still more tedious, and was also accomplished by lamplight. Perhaps a hundred vessels in the omentum were bleeding, and there was about a pint of blood in the peritoneal cavity, mainly, of course, in the pelvis. The omentum being adherent at the site of the umbilical hernia before the tumour had commenced, had become much elongated, while the latter was rising behind it into the epigastrium;

¹ This mass weighed $25\frac{1}{2}$ lbs., and $15\frac{1}{2}$ lbs. of fluid were removed from the two sacs by tapping—41 lbs. in all. It was the common polycystic tumour, and needs no special description, therefore.

² The removal of the tumour having brought the liver into view, it was seen to pulsate very decidedly. I had not observed this fact in my previous operations.

and now, on being drawn out through the incision, extended four or five inches down the thighs. On exposing its surface freely to the air, the smallest vessels soon ceased to pour out blood. I applied ligatures of fine silk to more than a dozen of the largest of them (only two arteries), and cutting them close, left them in the peritoneal cavity. The oozing of blood, however, still persisted, and I applied torsion to many other vessels, drawing out the omentum to search for them until it became cold, and then returning it for a time to the abdominal cavity, till it was warmed again.

This process consumed $1\frac{1}{2}$ hour, at the end of which time all oozing seemed to have ceased, the blood was thoroughly removed from the peritoneal cavity by means of soft sponges, the omentum was returned, its lower portion being tucked in folds into the pelvis, and I proceeded to close the incision.

And here another difficulty presented itself (and which I had stated to the patient), viz : the thickness of the tissues through which the incision passed was so great as to render it doubtful if I could, by any possibility, secure perfect coaptation of the edges of the peritoneum within and, also, of the edges of the incision throughout its entire thickness ; though a failure in either of these points, and especially of the former, would probably induce a fatal result. There was, however, no difficulty above the umbilicus, as the thickness was only about a half inch. Below, it was two inches as before stated. Eight silver sutures were applied at and above the umbilicus, each perforating the peritoneum as well as the other layers. Below the navel, I first passed five needles five inches long (which I had prepared for that purpose), through all the layers as above, then passed two strong ligatures, each entering between two needles, on one side of the incision, and then being returned in the space between the next two needles, and tied on the side whence they started. Finally the hare-lip suture was applied to each of the needles, and their extremities shielded by bits of cork ; the spaces still gaping between the needles were more accurately closed by superficial silk sutures, a compress wet with warm water and covered by oil silk was applied to the abdomen, and the patient put to bed at 9 o'clock.

Thus the whole operation lasted very nearly five hours ; during the whole of which time the patient remained insensible under the ether. The pulse was now 120, and not very weak. She had no appearance of collapse, soon recovered from the effects of the ether, and had no subsequent nausea or retching.

McMunn's elix. opii gtt. xxv were given just after she was put in bed, and the following is a condensed report of her progress after the operation. My object is more especially to call attention to the after-treatment. I will here state, however, that though I had of course expected to use the catheter for the first few days, the patient insisted on evacuating the bladder by her own efforts at $9\frac{1}{2}$ o'clock (then 5ij), and did so throughout the progress of the case, averaging about 5ij to 5ij every three hours, or 5xvj to 5xxiv per diem.

10 $\frac{1}{2}$ P.M. Pulse 112 and regular. Skin natural. Reaction well established. Elix. opii gtt. xx. Took a little milk-porridge. 12 o'clock. Has slept a very little, but is quite restless. Elix. opii gtt. xxx. 3 A. M. Pulse 108. More quiet now and has but little pain. Compress changed. 6 A. M. Pulse 120 and fuller. 7 $\frac{1}{2}$ A. M. Elix opii gtt. xxx. " Feels as though she was going to get well."

Sept. 4. Morning after the operation.—9 o'clock. Pulse 120 and of fair strength. Countenance pale, but spirits good. No nausea. 11 o'clock. Elix. opii gtt. xx. 2 P.M. Pulse the same. Has slept half of the last three hours quietly. Skin good. Is somewhat thirsty, and feels sick a little. Turned her on her left side. Takes two tablespoonfuls of milk-porridge every two hours. 6 P.M. Elix. opii gtt. xx; just after taking it vomited very easily. 7½ P.M. Pulse 125, steady, but not as strong as in the morning. Still a little thirsty. Elix. opii gtt. xxv. 9½. Vomited again at 9 o'clock, but feels better for it. Pulse a little weaker. Elix. opii gtt. xxv. 12. Has been sleeping a little. Pulse 126 and weak; respiration 32. Brandy 5j; beef-tea three dessertspoonfuls—repeated soon. Expression anxious. 1 A.M. No more nausea. Doing better. Elix. opii gtt. xxv. Brandy 5j. 3. Has slept about half of the last two hours. Pulse 124 and very weak. "Feels very sleepy and tired," but is constantly moving her limbs about because of their aching. Brandy 5j, and beef-tea. 4. Injection of brandy 5iv, and beef-tea 5ij. 6½ A.M. Pulse 120 with 12 intermissions per minute—still weak but better; respiration 24. Not much pain, but feels very tired. Has slept quite well. Elix. opii gtt. xx.

Second day after the operation, 9 A.M. Pulse 118 and stronger; skin very good; pupils unaffected by opium; abdomen tympanitic, but no tenderness. 12 M. Pulse the same—no intermissions; skin moist and of good temperature; expression of countenance better than last evening. Elix. opii gtt. xx. Brandy 5j every hour since early morning and beef tea frequently. 6 P.M. Pulse 120. Clothing changed—causing very little fatigue. Took pil. opii j at 3 o'clock. Beef-tea and brandy not quite as often—the stomach being somewhat irritable. 8. Injection of beef-tea 5ij, brandy 5jj, and elix. opii gtt. xxx. 3 A.M. Pulse the same. Has had elix. opii gtt. xx and brandy 5j every two hours. Injection of beef-tea 5iiss, brandy 5j, elix. opii gtt. xx.

Third day, 9 A.M. Pulse 118 and better. Is comfortable; no increase of tympanites, no tenderness; tongue moist, and thirst less. Has slept some. 9 P.M. Pulse 118. No nausea. Abdomen very large and tympanitic, but not tense. Troubled with eructation, but otherwise comfortable.

Fourth day, 9 A.M. Stomach irritable; has vomited some, and food and medicine have been given per rectum. Tympanites has been very troublesome, and a tube was introduced into the rectum—affording relief. Soda bicarb. occasionally for acid stomach. She asked for cracker and tea and was allowed to have it. Pulse 120; tongue good. Gas passed per rectum. 3 P.M. Quite restless. Tongue a little dry. Has not taken as much nourishment to-day as yesterday. Injection beef-tea 5iv, brandy 5ij, and elix. opii gtt. xxx. To have elix. opii gtt. xv every two hours. *Some blood-stained serum escaped by the side of the ligature.* 9 P.M. Very comfortable. Pulse 120 and good; tongue better. Clothes a good deal stained by the blood-coloured serous fluid from the peritoneal cavity. Gas passed several times per rectum.

Fifth day, 9 A.M. Pulse the same. Comfortable night. Takes cracker moistened with brandy and water, and a little beef-tea, and has the nutritive injections every four hours. Less tympanites. Weak, but does not complain of feeling tired. The blood-stained serum oozes out freely. Urinary secretion abundant. 9 P.M. Oozing continues and its colour is a little darker. Talks in her sleep.

Sixth day, 9 A.M. Pulse 120 and good; has been sleeping and feels very comfortable. Talked in her sleep. The fluid now oozes through an opening above the umbilicus which has not closed up. Its colour deepens. Doubtless there are clots in the peritoneal cavity. Tympanites no longer troublesome.

Seventh day, 9 A.M. Pulse 120. Feels weak and looks pale; tongue a little dry in the middle. The dark serum now quite fetid, continues to ooze freely. Only 5ss of brandy during the night. Talks in her sleep; has vertigo, but insists that all is right. 2 P.M. Has been restless and feels tired; countenance anxious; tongue rather dry. Head feels confused. Two good alvine evacuations produced by an enema of soap and water. The signs of blood-poisoning being now sufficiently evident, I decide to inject the peritoneal cavity at the next visit. 7½ P.M. Injected the abdomen with a pint of blood-warm water and obtained over half a pint of pretty thick, bloody matter; and some also flowed out after the tube was withdrawn. 10 P.M. Pulse 112 and weak. A little wandering when partly asleep. Has been having the injections of beef-tea and brandy, and the elix. opii regularly.

Eighth day, 9 A.M. Had a rather bad night. Pulse has been somewhat irregular and quite weak; skin more dry; tongue dry in the centre, and countenance dusky. Is evidently sinking. Had quinine gr. j at 4 o'clock, and has had brandy 5j every hour, in addition to 5v by injection. Injected the peritoneal cavity as before, and obtained 5iv black and not very fetid blood, and then freely washed out the cavity. The pulse had risen from 112 at 2 A.M. to 130 at 2 P.M.; weaker and more irregular. 2 P.M. Injected four pints of warm water (two at once) into the peritoneal cavity, and it brought away a great deal of highly-stained fluid of a dark colour; no indications of recent hemorrhage. Removed two of the eight silver sutures, and one double silk suture below the umbilicus. Patient fatigued by the prolonged operation of one hour. Pulse now 140; restless. Beef-tea and quinine by injection with elix. opii gtt. xv. Brandy 5j every hour. 5 P.M. Elix. opii gtt. xxv. 9 P.M. Pulse 135, feeble. Has been more quiet. A little oozing of a very dark, almost black, fluid. Injected one quart of water with liq. sode chlorinate 5ij, and it returned, toward the last, of a lighter colour than that which oozed out. Tympanites returning. 10½ P.M. Elix. opii gtt. xxx. 12 P.M. Injection of brandy 5ij, quinine grs. ij, with beef-tea every four hours. Pulse 136 and very weak. 4 A.M. Injection as before in addition to the 5j of brandy every hour by the mouth. Pulse irregular, intermitting; tongue has a dark centre. Oozing still continues. 7 A.M. Pulse 134 and more irregular. Delirious. Sent her attendant out of the room, and arose and sat up on the edge of the bed.

Ninth day, 9 A.M. Pulse 130, feeble; countenance not quite as bad; tongue brown, but not quite as dry. Injected her abdomen, and removed half a pint of very dark, fetid fluid. Leave half a pint of water, containing 5j of the chloride of soda, in the cavity. 2 P.M. Injected thoroughly, and brought out considerable dark, flaky matter. Left 5iss of the soda in. Pulse 127, and fuller; tongue better, and more moist. Clothing changed. 9 P.M. Pulse 115, and better. Quiet and comfortable since 2 o'clock. Four spontaneous alvine evacuations during the day. Suppository of opium gr. j. Oozing still of dark, offensive fluid.

Tenth day, 9 A.M. Slept two-thirds of the night. Pulse 110, and of very fair force; two alvine evacuations since last report—bringing away

considerable flatus and affording much relief by removing distension. Injections brought out more of the dark matter, but not as much as before, and not so offensive. 4 P. M. Pulse 104; tongue better. A little oozing still of thick, very dark fluid. Injected two quarts of water in all, and it came away less turbid than before. 10 P. M. Injected again, using the chloride of soda freely. Another pin, two silver sutures, and the lowest double silk suture removed. Had during the day elix. opii gtt. xxv, and brandy 3j every hour, with quinine gr. j every four hours as usual. Chewed some beef at noon.

Eleventh day, 9 A. M. Injected as usual; fluid comes out clearer. 3 P. M. Has been growing more and more restless since morning; tongue drier; pulse 120. Washed out the peritoneal cavity thoroughly, obtaining a darker fluid. Pulse, after the operation, 112. To take quinine gr. j every three hours, beef-tea by the stomach freely, and per rectum, with elix. opii gtt. xxv. Enema repeated at 6 o'clock. 10 P. M. Lighter coloured fluid obtained by the injection. Two more silver sutures removed.

Twelfth day, 9 A. M. Pulse rather weak during the night. Has been taking brandy 3ij every hour. Better now. Fluid removed, clearer, and nearly odourless. Appetite good. 2 P. M. Tongue cleaner at the edges, but still dark and heavily coated in the centre. About 3iss of thick, somewhat offensive pus obtained from the abdominal cavity—some of it flowing out through the bougie, and some being drawn out by the syringe. None of the red, flaky matter obtained. 3ss chloride soda left in. 10 P. M. Fluid quite clear. Pulse 102 before injection, and 96 after it. No opium since 3 o'clock, then gtt. xx. Better than yesterday. One needle removed. Takes brandy 3j every hour.

Thirteenth day, 9 A. M. Good night till 4 A. M.; then two alvine discharges; the first natural, the second fluid. Enema of beef-tea, with tinct. opii gtt. xl. Very comfortable now. Mutton chop for breakfast; appetite good. 4 P. M. 3iss of pus escaped around the tube on pressure, and the injection brought away some more. Last needle removed. 10 P. M. Pulse 98. Very comfortable day. Very little opium during the last twenty-four hours. Takes brandy 3j every hour and a half. A little purulent fluid obtained by injection.

Fifteenth day, 9 P. M. 3j good pus obtained by pressure. Washed out the cavity thoroughly, the fluid at first containing considerable fetid pus, but being quite clear at last. No tenderness of the abdomen at any time. Injected but twice to-day. Tinct. cinch. comp. 3j three times a day instead of the quinine. To take brandy 3j every two hours.

Sixteenth day, 9 P. M. Pulse 96, good; tongue quite sore from sudden clearing off of the coat. Tinct. cinch. comp. being rejected by the stomach, to take quinine gr. j every four hours again. 3ss pus pressed out at noon, and only 3j to-night, but it was dark and had some fetor. Injected but twice to-day, and so on to the twentieth day.

Seventeenth day, 9 A. M. Pulse 106, and weaker; countenance more pale; some sordes on the teeth; little appetite. On the whole failing a little. Complains of pain on passing bougie down towards the ligatures, also on filling the cavity with water. Pus more fetid. Removed more of the dark, thick matter like that removed at first. To take liq. sodæ chlorinatae gtt. vj every three hours. Had brandy 3j every hour during the night. 9 P. M. Pulse 96, and better. About 3j of pus obtained by injecting and allowing the fluid to flow out; no fetor. She feels comfortable and has no pain. Bowels have been rather loose during the last three

days, there having been two or three thin discharges daily; one good one to-day.

Eighteenth day, 9 A. M. Pulse 96, rather weak; tongue less red, but clean; not much appetite. Injected water came away thicker and darker than usual. 4 P. M. Pulse 100, and quite weak; some nausea most of the time. 3ss pus by pressure. Fluid came away in the morning, and with it one little slough (from the omentum?). 10 P. M. Has been more comfortable since last injection. Sat bolstered up in bed half an hour. No sordes on teeth now; no nausea. To take now tinct. opii gtt. xv in the enema of beef-tea.

Nineteenth day, 9 P. M. Very comfortable to-day. Less pns and that odourless.

Sept. 23. Twentieth day, 9 P. M. Pulse 88. Best day yet. Have injected three times, but have obtained only a little pus. She ate a little beef-steak with good relish. Discontinue the chloride of soda.

Twenty-first day, 9 P. M. Slept considerable last night, and has been better to-day. Beef-steak and rice for dinner. Pulse 92. Was removed to the sofa, and remained there three hours. No opium during the last twenty-four hours. Fluid clearer. To take brandy 3j, with quinine gr. j every fourth hour.

Twenty-third day, 10 P. M. Pulse 88 and good. Improving a little. She took this morning hydrarg. cum ereta grs. iij, with pulv. rhei grs. iv, and two good evacuations resulted. But little pus oozes out now, and but little is obtained by injecting, and that nearly odourless.

Sept. 30. Twenty-seventh day, 9 P. M. She had a slight relapse during the last two days, and there was more of the pus obtained by injecting, and the odour was offensive. The stimulants were given in increased doses, and the chloride of soda injected. Better to-day every way. Sat up in a rocking-chair fifteen minutes without fatigue. Discontinue the chloride of soda by stomach. Tinet. cinch. comp. 3j instead of quinine, which the stomach seems to reject. Has been injected twice daily since the twentieth day.

Oct. 1. Twenty-eighth day. At this time I returned to New York, leaving Mrs. H. in the care of my assistant, Dr. L. B. How, now of Manchester, N. H., and to him I am indebted for the following account of her progress:—

"*Twenty-ninth day*, 9 P. M. Pulse 88, and of very fair strength. Rather more pus to-day than usual by injection, but there was very little odour to it. Sat up half an hour to eat a breakfast of beef-steak, baked potato, and baked apple. Sat up another half hour in the afternoon. Sleeps better than at any time during the last two years. The tincture of cinchona not seeming to agree with her stomach, the citrate of quinine and iron was substituted for it.

"From this time she improved steadily, but slowly; her convalescence being considerably retarded by numerous exceedingly troublesome boils in the gluteal region and on the abdomen. The injections were employed twice daily (till the forty-seventh day), bringing away about 3ij of pus each time. As the opening through the abdominal wall seemed to be closing up, it was necessary to leave the bougie in for a short time after each operation, and soon, as the amount of pns decreased, a smaller bougie was substituted. All the pus now came, apparently, from the inner edges of the incision below the hernia, where, after the operation, it was impossible to perfectly coaptate the lips of the wound. It was all deposited outside

of the omentum, *i. e.*, between it and the abdominal wall, and midway between the upper and lower openings. Very little, if any, of it could have come from the pedicles. The bowels were kept regular by ripe fruit, and no cathartics were required.

"Oct. 12. *Thirty-ninth day.* With some assistance she walked across the room to the sofa, and sat up half an hour.

"*Forty-third day.* She arose and dressed herself without assistance, and sat up two and a half hours. *One ligature removed,* from the pedicle of the right side. The abdominal walls have contracted so much that only $\frac{5}{ij}$ of water can be injected at once without occasioning discomfort. Very little pus is secreted around the upper opening, and but little around the ligatures in the lower one. About $\frac{5}{ij}$ of pus of normal appearance are drawn out through the tube with the syringe daily. A little of the chloride soda was used each time."

On the 20th of October, forty-seven days after the operation, she returned to her home in Thetford, Vt., a distance of fifteen miles, where she came again under the care of Dr. Worcester, to whom I am indebted for a report of her subsequent progress.

Owing partly to fatigue from the journey, and partly to a slight attack of diarrhoea, she was unable to sit up till October 27.

Nov. 3. She sat up half a day, and walked about the house a little. *The second ligature* of the right pedicle came away. On introducing the tube this morning about $\frac{5}{ij}$ of pus escaped, and a like amount at night. Water injected passes out at the lower opening at once, none of it being retained.

From this time the amount of pus gradually diminished till November 26, when, none having been secreted in the abdominal cavity for forty-eight hours, the upper opening was allowed to close up, and it did so rapidly.

Dec. 3. The *ninety-first day* after the operation, *a third ligature was removed*, and three days later *the fourth and last*, after which the lower opening closed very speedily. The injections were used by Dr. Worcester twice daily during the first few days, and subsequently once. The patient, doubtless, lengthened the period of her convalescence by taking improper food, contrary to directions. She is now, March 1, complaining only of a slight lameness, which she considers rheumatic.

Remarks.— 1. This is my third case of double ovariotomy, all successful. In the report of my preceding case, I expressed the belief that my *first* was the first reported¹ in this country. I have since learned that the priority belongs to Dr. J. L. Atlee,² of Lancaster, Pa.

2. Decided tympanites has occurred after three of my operations; commencing, as in this case, on the second day, and giving no trouble after the fourth or fifth. It was not accompanied by tenderness of the abdomen in either case; and rapidly abated as soon as the gas began to pass *per rectum*.

3. Without my previous experience, I should have decided not to remove the tumour in this case, on perceiving the extreme vascularity of the omentum, and the extent and firmness of the adhesions. For though I did not doubt I might arrest the hemorrhage to such an extent, before closing the

¹ See this journal for April, 1851.

² See this journal for January, 1844, p. 44.

incision, that the patient would not die of subsequent loss of blood, I felt positive that some oozing of blood into the peritoneal cavity must subsequently ensue, and thus blood-poisoning be produced. The results, however, of injections into the peritoneal cavity, in two cases previously reported,¹ assured me that even if septicaemia should occur, I need not consider the patient as beyond my control, and therefore I decided to proceed.

4. No positive symptoms of internal *hemorrhage* presented themselves at all; though the sickness and great restlessness confirmed my previous expectations in this respect, and the use of the injections showed that nearly a pint of blood must have been slowly poured out after the incision was closed. The symptoms of septicaemia were first perceived on the fourth day, became decided on the sixth, and were met by the use of injections on the seventh day. They were decidedly checked after the eighth day, and diminished till the fifteenth, when they again increased to the seventeenth; after which time they were easily controlled till the injections were discontinued. The effect of the sulph. quinine in raising the patient above the septic influence (and also in neutralizing it, perhaps) was most striking. If the doses were either diminished or given at longer intervals, the symptoms were at once sure to return with increased intensity. The effect also of the liquor sode chlorinatae, given internally, in neutralizing the poison, was equally apparent. I feel positive in regard to these two points, and consider them the two great remedies for septicaemia.

5. We can account for the return of the symptoms of septicaemia in an aggravated form, after having been so well controlled (after the ninth day) by the injections, I think, only by recognizing two independent sources of blood-poisoning. (1.) The blood in the peritoneal cavity caused the symptoms which increased from the fourth to the ninth day. But this cause was well under control by the twelfth day, when the second appeared, viz.: the formation of *pus*, which on this day first escaped around and through the bougie, and which necessitated the injections even to the eighty-fourth day after the operation. I expected much difficulty in removing the blood, since it was *behind* the omentum, and the latter was very *wide* as well as long and thick; but by always carrying the bougie obliquely towards the lumbar region, that difficulty was at last overcome. But whence came the *pus*? I doubt not from the granulating surface between the edges of the incision, internally: it having been impossible perfectly to coaptate them, on account of the thickness of the abdominal walls below the umbilicus, as before stated. Hence the suppuration continued till the union was completed internally. The pus, therefore, was formed in *front* of the omentum, though it often passed over and behind it, before it was removed.

6. The whole number of times the peritoneal cavity was injected before

¹ See this journal for January, 1856, and April, 1853.

the patient returned to Dr. Worcester (41 days) was 89. He repeated the operation 46 times, making 135 injections in 78 days.¹ In the two other cases treated in this way, I continued the injections 7 days and 59 days. Without their use, I feel confident that all three of these patients would have succumbed.

7. So large an amount of opiates as was administered in this case is, I think, very seldom justifiable. Enough should be given, in every case, to control pain and restlessness, and secure sleep, and *no more*. In some cases, therefore, I have not given more than a single daily dose during the first three or four days only; while in this case, from 145 drops of McMunn's elix. down to 90 drops were given every twenty-four hours during the first five days. I have always given the opiates, and the nourishment, *per rectum*, if the stomach is irritable.

NEW YORK, March, 1864.

ART. VI.—*Cancer of the Stomach.* By W. S. W. RUSCHENBERGER, M. D.
U. S. Navy.

NAVY YARD, Boston, Mass., May 14, 1863. Mr. G. K., acting master U. S. Navy, aged 49, native of Massachusetts, about 5 feet 6 inches, weight 140 lbs., has been engaged generally in commercial pursuits, and has not been much at sea. Habitually abstemious; drinks water chiefly; does not use tobacco.

About six months ago, and ever since, he feels, whenever he ascends a high flight of stairs to the sail-loft where he is often called in the course of his duties, weak in the knees, then palpitation of the heart, and recently, when he reaches the top of the stairs, he is speechless for some seconds. No cardiac sounds of abnormal character are observed. Skin sallow; aduata clear white; constipated; flatulent; tongue coated. Has acid and sometimes bitter risings in the throat. He has been constantly engaged in his duties, which at times have been attended with mental worry, and being zealous in his work, he has habitually eaten rapidly, and at irregular intervals. Bowels not moved for four days. R.—Ipecac. pulv. 5ss; Ipecac. vin. 5ss; Aq. fount. 5iss. M. Ft. haust. Emesis to be promoted by infusion of chamomile. After operation of the emetic, arrow-root or gruel, if there is desire to eat. R.—Hydrarg. chlor. mitis gr. i; Saech. alb. gr. v. M. Ft. pulv. et in chartulas vi dividend. S. One, dry on the tongue every four hours.

15th. Vomited freely; ejected a considerable quantity of brownish,ropy mucus. Bowels moved moderately. General aspect and hue of skin much improved. Ate toast with weak tea this morning with zest. Pressure of waist-band or sword-belt causes discomfort at times. Continue calomel. Dry cups to epigastrium for thirty minutes. Senna ext. fl. 5ij h. s. s.

16th. Bowels free; relieved by the cupping; feels much better. R.—

¹ The last injection being on the eighty-fourth day after the operation.

Ferri. chlorid. tinct. 3ijj; Belladonnae tinct. 5j. M. S. Twenty drops in a wineglassful of water ten minutes before each meal.

18th. No eructations; but very little soreness over the stomach; constipated. Sennæ ext. fl. 3ijj h. s. s.

20th. Bowels free; feels generally better. Persist.

24th. Constipated; repeat sennæ.

June 9th. About a week since moved his residence from the Navy Yard to Newton, Mass., for the summer. Flatulent; soreness of abdomen on moving, but tenderness very slight. Bowels not free. R.—Strychnia et ferri citratis 3iiss; Rhei pulv. gr. xij; Glycyrrhizæ ext. pulv. 3j. M. Ft. mas. et in pil. xxiv div. Cap. i. q. q. 6ta h.

24th. Omit pills. R.—Bismuth carb. 3iiss; Glycyrrhizæ ext. pulv. gr. x. M. Ft. mas. et in pil. xxiv div. Cap. i. q. q. 4ta h.

July 29th. Adnata pearly; complexion somewhat sallow; feels pretty well. At night has pain running through from stomach to back. Persist.

August 15th. Has been on a trip to the White Mountains. Tongue pale and slightly coated; bowels less constipated than usual; complexion of a straw tint; adnata pearly; pulse 92, small, soft; thirsty. As long as he is moving about feels very well; appetite fair; no longer feels oppressed after eating; but on lying down at night, or rather about fifteen minutes after being in a reambent position, has a pain which passes between the epigastrie region and dorsal vertebrae, of which the sixth and seventh are a little sensitive to pressure. This pain hinders sleep. It is quickly dissipated in the erect posture by friction over the back. To obtain sleep he has tried a semi-erect position in a chair, and believes he slept last night about two hours. There is some sensitiveness to pressure at the serobieulus, circumscribed to a region about two inches in diameter; no tumour perceptible. There is still palpitation on going up stairs, &c. At somebody's suggestion, he says, he drank cider, but it did not agree with him: one day he ate a good dinner and drank champagne without inconvenience. Auscultatory sounds appear to be normal. Dry cups p. d. for thirty minutes statim. At night apply emplast. lyttæ, three by four inches. Valerianaæ ext. fl. gtt. xxx at bedtime, and repeat every hour pro re nata. R.—Amygdalæ amarae ol. gtt. vj; Conii ext. gr. xvij; Bismuth. carb. 3iiss. M. Ft. mas. et in pilulas xxiv dividenda. Cap. i. q. q. 4ta h.

Sept. 3d. States that the medicines (prescribed August 15th) did not procure sleep, and that a practitioner visiting his house at Newton, Mass., "prescribed some mercury pills," and since that time he had felt better. Although Mr. K. has been in the Navy Yard frequently since the 15th August, he did not present himself to me. Since I saw him he has lost flesh; his complexion is unchanged.

I am indebted to Dr. W. F. TEULON, a gentleman of long and large experience, the practitioner alluded to above, for a copy of his notes of the case. He says, August 17th, speaking of Mr. K., "Of late he has suffered from indigestion and constipation, liver-complaint with tendency to jaundice, inactivity if not thorough disease of the mesentery, inducing tabes and a painful remittent affection of the gall-bladder, accompanied probably with obstruction and gall-stones. His pains return every night after going to bed, obliging him to crouch forward, then to rise and sit in an easy chair, where he cannot keep one position long. At such times he has cold feet and flatulence with distension of stomach, which increases the pain, and relieves him when it escapes. His heart and pulse are quick

and forcible, as if from running ; but it does not give signs of other than symptomatic disorder. In the day he can make moderate exertions, and seems to have great strength of nerve, considering his distress.

" When in the paroxysm of pain, to take tinct. gelsemin. ʒj, and repeat once an hour, three times. To eat two or three prunes infused with senna and sugar, every morning. Tamarinds also may be used. Sea-water : use as an injection, and as an ablution every morning ; also in a compress to the stomach and bowels, after anointing them with R.—Ung. hydrarg. biniodid., Adeps S., aa ʒiv. M.

" When troubled with flatulence, take acid sulph. aromat. gtt. x in an ounce of water, and repeat every half hour till relieved. R.—Hydrarg. chlorid. mitis, Opii pulvis, aa ʒij ; Solani. lycopersici. ext. ʒij. M. Fiant massa cum aqua q. s., divide in pilulas No. xl. Take one at six o'clock every evening.

" August 27th. Has been much relieved of the pain and able to lie down and sleep ; also to take exercise with more than his usual strength. He can also use a better diet, and has improved hopes and feelings. On the other hand, he is tender and bloated in the abdomen and ankles, and has a difficulty in secreting and voiding a sufficient quantity of urine. A tea-spoonful of fluid extract of taraxacum morning and evening. Apply wilted burdock leaves to the feet towards bedtime. A wineglassful of infusion of parsley seed three times a day.

" Sept. 1st. Much relieved of his old pain, and finds the bowels in better condition. The black and seybalous masses are disappearing, and bilious feces coming down. He now feels himself weakened by the calomel pills, but is more clear of jaundice. His skin is very itchy, and has a dead wilted look, for which I recommended the Turkish bath. The infusion of parsley seeds has been very useful.

" 8th. He did not go to Boston to-day because he had only two hours sleep last night, owing to colic in the sinister half of the abdomen. He made a hearty dinner yesterday of roast-beef and boiled rice. He says that beef, however good, does not agree with him. He has made too free at the table lately, whereby he suffers from indigestion and pain, though not in the same place as formerly. He says he can walk better, and feels himself stronger. Wishes to go to Philadelphia ; to which, as the weather is fine and the mercury has not affected his mouth, I conceded. Sodaæ sub-carbonas to be added to the bath, to promote clearing and opening of the skin. Tinct. sarsæ rad. Hispani, Tinct. Septandriae rad., partes æquales. A tablespoonful with each dose of taraxacum in the draught of water.

" 13th. Has returned from Philadelphia. Says that everything he eats distresses him. A wineglassful of infusion of peach leaf to be taken just before eating.

" 15th. A dejection this morning, rather dry, after waiting six days. He attends to his office duties, eats but little, and that little gives him uneasiness. He has but eight pills (calomel, &c.) left ; the opium in them seems to affect him more than the mercury, yet he has frequent pain. Every forenoon or morning take a sufficient quantity of aq. magnesiæ citratis to regulate the bowels. Liq. bismuthi nitratis, a third of a tea-spoonful, with a teaspoonful of the mixture of sarsa (Sept. 8), and wineglassful of the infusion of peach leaf.

" 18th. Has driven to Ashland, and worked considerably, eating liver and other meats, but in general has pain after eating. R.—Zinci cyanidis gr. ss, in a large spoonful of water when the pain in the stomach is severe.

"22d. Takes his last calomel pill to-night. He has a great irritation at the stomach, but there has been no salivation. The new powders appear to affect him but little; the same is observed of the liq. bismuth. nitrat. and peach leaf. The gelseminum occasions dizziness when he takes it three or four times. I advised him to take it every half hour while in severe pain. His head is generally well. Pulse about 80, and rather hard. R.—Podophyllin, papaver, $\frac{aa}{2}$ gr. x; Symphytum pulv. gr. xx. M. Ft. pil. xx. One every night in place of the calomel pill.

"28th. Weak and distressed. Has suffered much of late from pain in the epigastrium. Bismuth. subcarb. gr. v in a large spoonful of water every four hours. Creosoton puris, chloroformi, $\frac{aa}{2}$ $\frac{5}{j}$; Spiritus rectificat. $\frac{5}{vj}$. M. S. Ten drops in a tablespoonful of water every four hours, if distressed. Hyoseyami ext. fl. gtt. xx in a tablespoonful of the bitter infusion, with the pill at night. Hops and dried peach leaves, $\frac{aa}{2}$ $\frac{5}{ij}$; Lime-water $\frac{1}{2}j$. Infuse and strain.

"30th. Has been in distress more or less ever since; constant gastralgia, and of late, diarrhoea, operating once in five hours, and very little rest or nourishment. Opii, in pill, gr. iss at night, in place of the podophyllin. Let the dose of hyoseyami be reduced to gtt. x. A tablespoonful of infusion of cranesbill after each alvine operation. Morphiae sulphatis liq., a teaspoonful every hour, when in extreme pain, till relieved. Continue bismuth and creasote.

"Oct. 1st. Returned to his residence in the navy yard.

"2d. Has had two better nights, but has become constipated again; cannot take any food without its exciting pain. He had a sort of ptyalism for one day. Since he ceased taking the mercury, it has apparently affected him more than while taking it. Carbo ligni salicis, a level teaspoonful three times a day in beer, lime-water, or muelage of elm bark. Acid. hydrocyanic, U. S. P., gtt. v, in a large spoonful of water every hour, while in severe pain. Experiences little effect from the morphia; more from the creasote. Being constipated, to omit the cranesbill, and take citrate of magnesia again.

"5th. Has experienced a gratifying amount of ease, and slept well up to last night, without using hyoseyamus; but he has become very constipated, and early this morning he threw up a large amount of yellow bile, and again early in the afternoon. He is very sensibly weak, and takes lager beer as a tonic. I advised him when sick to use infusion chamomile, and to wear over the stomach emp. ferri rub., four by eight inches.

"7th. Found him very drooping and poorly. He could not bear the plaster over the stomach, so took it off, and removed it to the back. Yesterday he ate a sweet potato, and suffered much from flatulence and distension. No alvine motion for a week. Salt water $\frac{1}{2}ss$ to be injected every three hours, till the bowels are relieved. A plaster of equal parts of turpentine and simple plaster to be worn over the stomach.

"9th. Bowels copiously relieved by the second injection. He feels but little improved, there remain so much flatulence, pain, and spasm about the stomach. He takes chamomile infnsion frequently. He vomited this morning about a pint of a bilious ropy mixture. Complexion much whiter than formerly. Hyoseyamus does not make him sleep, although he takes a teaspoonful; hence, to take a teaspoonful of morphia with it every night, and a podophyllin pill after every constipated dejection. To take the creasote and hyoseyamic acid alternately, every third hour. Suspend bismuth and the infusion of hop and peach leaf. R.—Ipecac. pulv. gr. v. To be ad-

ministered in a draught of chamomile infusion when vomiting is threatened. R.—Magnesiae calcinatae, Carbo. ligni salicis, partes æquales. M. A teaspoonful twice a day. R.—Prunus cerasus, ext. fl., a half teaspoonful in water, after each meal; if there is nausea, two teaspoonfuls of French brandy. R.—Ol. juniperi 5ij; Æther. sulph. 5vij. M. Moisten a small lump of sugar, and wash it down with water or chamomile tea, to relieve flatulence and pain. R.—Ol. abies canadense 5iv; Liniment. ammoniae 5iss. M. To rub over the back or stomach, or any part in pain.

"12th. Was out to-day; suffers less pain; does not vomit, but is extremely weak. On his return, ordered him a teaspoonful of brandy in a glass of water. Removed the plaster from the stomach, because it increased the pain. Had an interview with his former physician, Dr. Ruschenberger, who remarked that hepatic disorder was not the primary one, but gastric, and that I gave him a rather large dose of podophyllin.

"14th. Yesterday was pretty comfortable, but at night was greatly distressed for two hours, then vomited, and had a thin dark stool, indeed three such. To-day, just after dinner, was much distressed. The prussic acid seems to relieve him, but none of the anodynes affect him so favourably as the gelsemium, to which it may be prudent to return. The creasote and hydrocyanic drops alternately, every two hours, if the pains be urgent. Infusion of hop in place of chamomile. Rennet whey for ordinary drink. Aqua ammoniae biearbonatis, a teaspoonful in water for acidity or exhaustion.

"16th. Expressed himself better to-day. He does not feel so much pain after eating, and does not eat so much. Takes no spirit; usually has some pain a little while after taking the hyoscyamus. Has not vomited for two days; no alvine dejection. Can sleep better, and on either side, but complains of weakness, particularly at the knees. His tongue is very moist, watery. No ptalism. Pulse weak, sharp, but 88. Some pain felt in the region of the spleen. Tinct. of coeculus Indicus, ten drops in water after each meal, to replace the prunus cerasus, ext. fl. Add the prunus cerasus to the taraxacum. A teaspoonful before breakfast and supper. Continue creasote and hydrocyanic acid alternately; also, the rennet whey and infusion of hop. Suspend the hyoscyamus, the podophyllin, and the opium. Take the carbo ligni alone, when the bowels are open, and with magnesia when they are not. Take morphiae sulph. sol. 5ij at 8 o'clock P. M., and an extra teaspoonful, if watchful. If costive for two days, on the following morning use an injection of sea-water.

"19th. Vomited more stringy, crude material yesterday morning. Has had less pain since. Has had four alvine dejections since Friday. He is weak and low-spirited, yet much better than he was. Feels better without the hyoscyamus; likes the effects of the creasote, of the hydrocyanic acid, oil of juniper, and carbonate of ammonia. Has had several relapses of local pain which were relieved by rubbing with the liniment. Yesterday when he vomited he brought up a spoonful or two of fresh blood. Says his stomach feels as if scraped. Complains of articular pains resembling rheumatism. Use less of the magnesia and carbo. ligni. To drink albumen in whey and mucilage of slippery elm. Take half a pill of the podophyllin, &c., every costive day, and an opium pill if too relaxed. Pill. sulph. morph. gr. ss every night; a teaspoonful of gelsemium at any time for pain.

"21st. After a few minutes of distress, he vomited again yesterday, a chymous mass with some admixture of bile, though less than before, and some

charcoal. I was glad to see less of bile, but the carbo appears to irritate. I therefore suspended it, and ordered a return to the bismuth. Recommended to give the morphia earlier, *i. e.*, at six o'clock, or before supper, that he may get to sleep earlier. As meat always causes pain, to leave it off and use fish. I advised him to take a morsel of cheese, and also cauliflower and parsnips with sweet butter. R.—*Quiniae disulphatis* gr. iv; *Aqua* $\frac{5}{4}$ *iv.* M. A teaspoonful three times a day, with ten drops of tincture of coeculus.

"23d. He has vomited more than ever, seemingly more than all his ingesta, and suffered a great deal of pain, but not of so fixed a character. Mrs. K. thinks the creasote and hydrocyanic acid in continuation procure more ease than anything else. He is weak, but has a proper taste for his food, and is evidently delivered of an immense load of bile. He continues constive. Infusion of eupatorium perfoliatum in place of the infusion of hop. Broth of clams or oysters. Wine whey occasionally. Cerei oxalas gr. iij two or three times a day in spoonful of water to settle the stomach. He has taken during this month nearly an ounce of officinal prussic acid. The effect was agreeable, but not durable. I have on no occasion remarked any cumulative quality in this drug.

"26th. Found him in bed, not because he was decidedly worse, but because he preferred it. Has not vomited since Saturday night, then twice, but not nearly so bilious as formerly. There has been a gradual diminution of the bile in each of the quantities ejected. His tongue looks well, is clean and watery, not livid and glairy as formerly. The adnata still look pearly, but less so, rather like ivory, each canthus a little yellow, but the blood and colour have returned to the skin. He is withal very constipated, and what he passes is seybalous. An injection of magnesiae sulph. $\frac{5}{4}$ ss in aq. marin. lbs. promptly relieved him when used. Dr. Ruschenberger counselled me to use sugar of milk in place of cane sugar [without seeing the patient]. R.—*Ammonia mariatis* pulv. $\frac{3}{4}$ iiss; *Rhei* pulv., *Gentianæ ext.*, $\frac{aa}{a}$ gr. xij; *Acacie* pulv. q. s. M. Fiant pilule No. xlvi. One with a spoonful of infusion of eupatorium perfol. three times a day. Emp. ammoniaci extenso in alutem, dig. 8×8 , to wear on the epigastrum.

"28th. Found him curled up in bed, very languid and depressed. Has again rejected everything from his stomach, and apparently much more than he swallowed. The chyle and organic fluids being mixed with it, but a conspicuously smaller increment of bile. A phial of the matters rejected was forwarded to Dr. R. for microscopic observation. He continues distressed in the bowels, which are very reluctant to act, and do not produce any natural stools, properly concocted. He takes the muriate of ammonia pills, but thinks they cause extreme uneasiness. *Fel bovini* $\frac{5}{4}$ iv; *Aqua* tepidae 1bj. M. Inject the bowel with a Davidson's syringe, inserting as much of the tube as possible. R.—*Potassii iodid*. $\frac{5}{4}$ ij; *Aqua* $\frac{5}{4}$; *Tinc. nucis vomicae*, *Tinc. ext. monesiae*, *Vin. aloes*, $\frac{aa}{a}$ $\frac{5}{4}$. M. A teaspoonful three times a day, in place of the coeculus, &c., directed on the 16th, and the quinie sulphat.

"30th. Had the pleasure of meeting Dr. Ruschenberger, who examined the case. He remarked that his complexion was much improved, and informed me that the egesta contained organic matter, nucleated cells, epithelial scales, and a few blood-globules. The patient seemed much more at his ease, having since the injection [ox-gall] passed more than a quart of dark fees, including seybalous mass, and afterwards about a pint of thinner

consistence without scybala, and having the natural colour and odour, the most satisfactory I have witnessed for some weeks. He has not vomited since Wednesday, and will probably have an improved digestion from this time. May take refined coffee once or twice a day.

"Nov. 1. Applied over the epigastrium emp. ammoniaci cum hydrargyri spread upon chamois skin.

"2d. Vomited again on Saturday. Had considerable pain during the night. Yesterday morning had a bilious dejection; sent for Dr. R., who advised him to take rest during the day, and abstain from medicines, excepting the pills of muriate of ammonia. The following night was spent very painfully, more so than common. He took prussic acid to the extent of sixty drops, and of tinct. gelseminum over an ounce, yet found no relief until about four this morning, when he passed a large bilious dejection. He then remained easy, and in the course of the forenoon had another, both well-conditioned, since which he has been easy but fatigued; and has taken coffee with milk and bread. One pill [opii gr. iss] was taken about two hours before relief came. This was the worst night he had seen. I waited on Dr. R., who suggested the probability of ulceration of a portion of the stomach, and the propriety of meeting it with argenti nitras. R.—Infus. sennæ 5iss; liq. morph. sulph. 5ij. M. To be given in case of a return of the colic. Foment with flannel wrung out of warm water and sprinkled with oil of turpentine half an ounce. He thought the elixir [potassi iodid. with tinc. nucis vomicae tinc. &c.] added to his distress. I allowed him to continue it in half the quantity. I find, with every wish to use a limited number of remedies, the various turns of his disorder demand a great many pro tempore. Be more chary in the use of the prussic acid.

"4th. These two nights he has felt a good deal better, having more ease, rest, and sleep; but is growing costive again, and has the same pain in consequence: the bowels are tender, particularly on the left side, but are not very heated. Inject fel bovinum 5ij. Give peppermint water freely.

"6th. Aspect more animated, intellect clear; lies abed and examines public bills presented for approval and payment; says he lacks strength to stand up. Vomited on the 4th at least half a gallon of liquid of bilious hue and acid taste, mingled with food, seemingly equal in quantity to what had been eaten during some days past. Dejection from bowels in soft balls and masses. Says the plaster applied to the epigastrium on Sunday is comforting—that it removes the sense of sinking 'as if the stomach fell across the back-bone.' Asked that one of the same kind might be applied to the back [W. S. W. R.].

"Since the 4th inst. has had two copious dejections, and vomited more. Part of the time he has been very easy, but had severe pain in the bowels while I was present. I advised the fomentation with turpentine; and one dejection to be secured daily by means of the podophyllin pill and injection of fel bovinum. One of these injections was retained so long that it appeared to have acted on the gall-ducts and eliminated clear gall.

"9th. His disorder proves very refractory and discouraging. He has again twice vomited a large amount, about two pounds of sour, flocculent, impure chyme, and has had no further action of the intestines, even from the ox-gall injections. Dr. R. visited him yesterday, and ordered a tablespoonful of beef essence, with a teaspoonful of brandy, to be administered per anum every three or four hours. The first injection removed the sense of praecordial sinking. Two teaspoonfuls of cream, with one of lime-water, three or four times daily. Seltzer water, in small quantity, for

drink. Solution of morphia a drachm or two pro re natā. By his advice prescribed to-day: R.—Argenti oxyd. gr. vij; Rhei pulv. gr. xxiv; Conii ext. gr. xvij. M. S. a. ft. mass et in pil. xxiv div. One every four hours. Other medicines to be suspended. His urine now gives him a little pain, but passes clear and well looking. He has much pain in the back above the reins, and from that sign, and the appearance of the matters vomited, I am persuaded there is disease in the pancreas, but the precise character of that disease is not very clearly intimated. His pulse is fuller and firmer than one would expect from his condition and abstinence, and may be sustained by a sub-inflammation of that organ. The pulse does not intermit. His tongue is bright and clean, which argues that there is less disease within the stomach than beyond it. Little masses of mucopurulent matter are every now and then spit up. I suppose from the bronchial glands, though he has at present no cough to speak of.

"11th. Has been easier since Monday; has not vomited; has taken a little nourishment, but remains costive, and is troubled with dysury. His pulse is now soft and nearly regular, as though relieved of some inflammation. He swallowed a little ice-cream and canary wine since dinner. Æther. nitric. spts. $\frac{5}{3}$ j in a tablespoonful of water occasionally. Ol. ricini $\frac{5}{3}$ j every day, or every second day.

"13th. Continues without vomiting, almost without medicine, pretty comfortable, and more hopeful. Did not take the ol. ricini, as he had a motion without it on Wednesday; it was pretty well concocted, and of natural colour. He speaks well of a mixture of lime-water and cream which Dr. R. ordered for him. It seems to soothe the stomach, neutralizing acid, and promote digestion.

"18th. Continues digesting slowly, with a soft pulse, varying from 70 to 80. No pain or vomiting. What pain arises is easily kept down by morphia. He is however much prostrated, and does not display much rallying force. Being anxious for an increase of strength, I advised a return to the use of the elixir (potassii iodid. with nucis vomiae tinct. &c.), in half drachm doses, with the pills of oxide of silver, and a strengthening embrocation. R.—Tinct. sapo comp., tinct. gentian. simp. $\frac{5}{3}$ ij. M. Dr. R. recommended the oxide of silver to be increased to one-third of a grain."

[22d. Until the 8th instant Mr. K.— vomited daily, or on alternate days, but never passed over the third day without emesis. Very little nausea preceded the effort, but there was always an urgency to empty the stomach which would not tolerate delay. The quantity vomited was always large, suggesting that it was made up from the ingesta of two or three days accumulated in the stomach; it was yellowish, greenish, and of the consistency and appearance of pea soup. There was and is still a spot, about an inch in diameter, on the right side of the ensiform cartilage, which is tender, but there is no swelling perceived. Since the 8th he has not vomited; has been generally comfortable, with improved complexion and circulation. Very much emaciated. Mental condition sound; feels that he could eat "pork, spare rib, or almost anything else." Complains of some uneasiness of right shoulder, which he says has been rubbed with a bitter embrocation. Feels oppressed this morning, in consequence, he thinks, of eating rather freely of "white, hot-house grapes." Pulse 72, soft, regular, and of fair volume. No stool since Wednesday; enema fel bovinum.—W. S. W. R.]

"25th. Lies prostrate, and looks like a failing man. He could not continue the elixir (potassii iodid., &c.), and therefore replaced it with popu-

lin gr. x; Acacia pulv. \varnothing j. M. To take a grain or more three times a day in a little water. I recommended him to use the juice of sweet oranges, and to try a little champagne."

[27th. Mr. K—— vomited on the 22d about a quart of amber-coloured liquid of the consistence of pea soup. He attributes the colour to eating black Hamburg grapes. Since that day his stomach has been retentive of small quantities; but there have been pain and twitchings at the old spot. His chief nourishment is administered per rectum. Emaciation increases, and muscular power decreases. Last night he took, by direction of Dr. Teulon, a teaspoonful of tincture of gelseminum, instead of morphia. His pulse is 80, very small, and very soft. Intellect much less sprightly than usual. Has some difficulty of micturition.—W. S. W. R.]

"28th. Has taken the populin since Wednesday without any disagreement. He remains much the same, or a shade better. His friends have informed him of his danger, and expressed a wish to consult another physician. Dr. C. Ellis has been nominated. He has had a fair operation since my former visit. He complains much of dryness of the mouth. Infusion of aselepias tuberosum to drink when thirsty. Valerian ext. fl. 5j to be taken once or twice after night."—W. F. T.

29th. Mr. K—— felt very much exhausted about 2 o'clock P. M. on Friday, in consequence of getting out of bed and sitting in a close-stool chair. Bowels were freely moved; evacuation normally moulded, of a bluish slate colour. There were much pain and flatulence. 3.30 P. M. Had taken five or six drachms of the solution of morphia; had no pain; voice husky; pulse 80, very small and weak; somnolent; dysury; voids small quantities of urine; general aspect indicative of great depression of the vital force. On Saturday he is reported to have passed a tolerably good night—a little dreamy. Beef essence administered per anum twice during the night. On Thanksgiving day drank about two ounces of champagne; and yesterday and last night some teaspoonfuls of gin with warm water and sugar. Voicee husky; intellect clear; tongue clean, moist, pointed; thirsty; pulse 82. R.—Quiniæ sulphatis gr. xxiv; Acid. sulph. aromat. m_{xxx}; Aq. dest. 5iv. M. S. a. A half ouncee with two ounces of beef essence every four hours per anum. He states to-day that he took more nourishment yesterday than he had on the three previous days. Pulse 86, very small. No pain; flatulent, thirsty; mouth feels dry and tongue thick, when he talks. There is a sense of slight weight in the stomach. A very deep inspiration causes no uneasiness. Urine passes abundantly. No movement of bowels since yesterday. Is moribund.

30th. Died tranquilly and almost imperceptibly at 1.35 P. M.

Dec. 1. Autopsy about 19 hours after death. No cadaveric rigidity; emaciation extreme. Abdomen only inspected. On exposing the viscera the intestines appeared in situ of normal colour, slightly distended with air. The omentum majus was contracted or corrugated into the epigastric region. Colon slightly injected, of rather darker colour than natural. Liver atrophied; not more than two-thirds of its natural dimensions; texture normal; colour of old mahogany. Gall-bladder distended; parts in its vicinity stained by bile. Spleen, kidneys, and mesentery were in no respect remarkable.

Having tied the œsophagus and intestine, the stomach with the pancreas, and two or three inches of the duodenum, were removed. A yellowish, pea-soup-like liquid poured out from the œsophagus when divided. The stomach contained about six ounces of the same description of yellowish

liquid. It was laid open along its greater curvature. A scirrhouss hardening formed a band about three inches wide around the pyloric extremity of the organ. The parietes of the pylorus were about an inch thick; the opening not contracted. The walls of the duodenum were rather attenuated, and of a greenish hue. A mass, about a half inch in diameter, included in the thickness of the pyloric parietes, was softened; its cut surface was mottled with black and ochre-coloured matters. The mucous surface of the pyloric extremity of the organ was smooth, glazed, and of a pale ochre-yellow colour. The mucous surface of the cardiac end was injected, stellated, and arterioles were perceived ramifying over it; the general colour was deep red. There were several circular patches, about an eighth of an inch in diameter, of a grayish aspect, which suggested the idea of deposition upon the surface. The colour of the peritoneal coat was normal. Half way between the oesophagus and pylorus, an oval scirrhouss mass, about one inch by three-quarters of an inch in its diameter, protruded from the lesser curvature internally, forming a slight elevation of the mucous coat. The pancreas were of scirrhouss hardness.

Summary.—In this case disease manifested itself first, by dyspeptic symptoms, accompanied by palpitation of the heart to such an extent at times that the patient suspected the organ to be seriously affected. The treatment was begun, May 14, 1863, under an impression that the patient suffered from atonic dyspepsia. Pain passing from the stomach to the back was complained of for the first time July 29, or more than two months after admission to the sick list. On or about the first of June he removed for the summer to Newton, a few miles from Boston, but transacted business in the navy yard almost daily. On the 17th of August he placed himself under the professional guidance of Dr. W. F. Teulon, of that place. Soon after the employment of calomel and opium, a half grain of each every night, the cardiac symptoms ceased to annoy him.

On the first day of October he returned to his quarters in the navy yard, but remained under Dr. Teulon's direction.

Vomiting began October 5th, and recurred daily, or every second or third day. Blood was observed in the ejected matter October 18th.

A portion of the matters vomited on the 28th was filtered through paper; nucleated cells, a few blood-globules, and some epithelial substance were observed in the filtrate. Between the 8th and the 22d of November there was no vomiting.

He slowly and regularly emaciated, and lost muscular power from the beginning to the close. The epigastric region was frequently examined, but no indication of induration or tumour was detected.

His intellect was clear throughout the disease.

Dr. Teulon's prescriptions number 94; he must have used more than a hundred during his seven months' treatment. Was death accelerated or retarded by the various drugs and combination of drngs which he swallowed in obedience to the conjectures of his medical advisers? At what period were the symptoms due to organic change? Would he have lived without any other than anodyne treatment?

ART. VII.—*Surgical Cases.* By DAVID RANKIN, M. D., of Shippensburg, Pa., late Acting Assistant Surgeon U. S. A.

CASE I. *Gunshot Wound of Arm.*—C. D., aged 18 years, private in Co. C, 1st Long Island Volunteers, was wounded June 2, 1862, whilst on picket duty, and was brought to Douglas Hospital, Washington, D. C., June 3, 1862. It was found, upon examination, that the missile was a minie ball, which entered the middle of the forearm, passing between the ulna and radius. It then entered the lower third of the arm, making its exit immediately behind the point of entrance, making in its course four distinct openings.

The patient accounts for the curious course of the ball by the position of his body when receiving the wound, he being in the act of loading his musket. The wounds were treated in the usual mode—that of applying cold water dressings until the deadened parts commenced to be thrown off by the suppurative process, by encouraging this process, by the application of flaxseed poultices, and, as soon as the process of granulation commenced, by dressing the wounds with dry lint, spread with a little simple cerate.

In order to keep the arm in a good position, an angular splint was applied, and kept on until the wounds were nearly healed.

CASE II. *Gunshot Wound of Bladder.*—William Rosenberg, private, of Co. K, 93d Regiment P. V., was wounded at the battle of Gaines's Mill, the missile being a minie ball. He was brought to Douglas Hospital, Washington, D. C., July 3d, 1862. The ball had entered near the crista of the ileum of the left side, and passing through the upper third of the bladder, and coming out at the right iliac region, the urine constantly passing away through one or the other of these openings, according to the position of the body. My great object in the treatment of this case was the position, that of semi-erect, and keeping the bladder empty, by maintaining a gum-elastic catheter introduced all the time, in order that the urine might pass off as fast as it came down from the ureters, and that there might be no chance of the bladder filling up as high as these two wounds; his bowels being moderately opened, he was kept on the antiphlogistic treatment; no drinks except some bland mucilaginous articles were allowed him. Cold water dressings to the wounds of entrance and exit were kept constantly applied. This treatment was continued for some ten days, which appeared to suit the case. At this time I was ordered to take charge of Epiphany and Thirteenth Street Hospitals, Washington, D. C. I therefore handed the case over to my successor and friend, Dr. Thomas P. Gibbons, and under whose careful attention and judicious treatment, I have understood since from the doctor, he perfectly recovered.

CASE III. *Gunshot Wound of Face and Neck.*—John Hamer, private, of Co. B, 93d Regiment P. V., aged 23 years, was admitted into Douglas Hospital, Washington, D. C., July 3d, 1862, with a gunshot wound of the face and neck, received at the battle of Malvern Hill. The ball entered immediately above the zygomatic process of the left side, and passing downwards and across, coming out on the right side of the neck, immediately below the pharynx, in its course fracturing some of the alveolar pro-

cesses of the left side of the upper jaw, and cutting the tongue considerably, making such a wound that, in attempting to swallow fluids, they passed out at the wound of exit as rapidly as they were put in by the mouth. He said at the time of the reception of the wound there was considerable hemorrhage, principally from the tongue, but when he arrived at this hospital the hemorrhage had entirely ceased. The treatment of the wounds was the same as that of ordinary gunshot wounds: they were dressed with lint saturated in cold water, retained by adhesive plasters.

All my powers of ingenuity were put to the test in order to get up some plan by which this man might be nourished. I tried a glass tube bent at a right angle; this he was unable to manage, as he had no power over the tongue and muscles used in suction. I finally determined to use the stomach tube, and in that way introduced into his stomach a sufficient quantity of beef-tea, wine whey, chicken and oyster broths, to nourish him. This operation was done three times a day. It was quite amusing to see the poor fellow, how anxiously he would look at his watch for the hour to arrive in which he would receive his meals.

Articulation was utterly impracticable, the use of the slate or paper being the only means of communication with those around him. In this way he was kept up for eleven days, at which time symptoms of inflammation set in, producing acute trachitis. The most active treatment was instituted in order to subdue this disease, but all proved of no avail; he rapidly sank, and died of asphyxia on the evening of the twelfth day of his admission into this hospital.

CASE IV. Committuted Fracture of Humerus: Resection.—D. S., aged 18 years, private in the 6th Regiment Maine Volunteers, was wounded in the first of the Seven Days' Fight in front of Richmond, and lay in an old open house until the fighting was over. At the expiration of the seventh day he was removed to the Epiphany Hospital, Washington, D. C. (of which I was then in charge) without any medical or surgical treatment or attention whatever, until he arrived at the above-named hospital, on the eighth day of his wound. Upon examination I discovered a committuted fracture of the upper third of the humerus, produced by a minie ball, to such an extent that it was, after consultation with Surgeons Coolidge and John H. Brinton, considered that all hope for the fractured parts uniting was vain; we therefore resolved to save the poor boy's arm, if not to the full extent, as near perfection as possible, under the circumstances.

We finally decided upon performing the operation of resection, though I must confess, it was apparently with a very poor chance of success, because by this time (the ninth day) his constitution began to suffer severely, symptoms of pyemia had set in, pus had formed, chills, hectic fever, and a severe cough had supervened, though, since his admission into this hospital, the pyemia has subsided to some extent, and he has rallied considerably by the constant use of brandy, quinia, cream, beef-tea, volatile julep, &c.

On the tenth day of his wound, and the third day since his admission into this hospital, we thought that he was in as suitable condition to have the operation performed as he ever would be.

I ordered the steward to have him taken to the operating room by one o'clock. He was not long in becoming etherized, and, assisted by Surgeons Coolidge and John H. Brinton, I performed the operation of resection of the upper third of the humerus; I made the flap of the shape of the letter V, sawed off the shaft of the humerus with the chain saw, and dissected

the fragments of bone from the muscles surrounding them. After disarticulating the head of the humerus, I washed the splinters of bone out cleanly, brought down the V flap to its original place, secured it with three sutures, one at the apex, and one on the side of the cone, the spaces between the sutures being closed by adhesive plasters, dressed with nothing but lint saturated with cold water. The forearm was then placed at a right angle with the arm, and retained in this position by an angular splint, after which he was returned to the same bed and ward he occupied before the operation. The sustaining articles were still continued to be given him. That night I gave him an anodyne pulv. ipecac. et opii gr. x. He rested comfortably during the night, and first part of the next day; in the evening he complained of some burning pain in the part, and said he thought it was swollen. I immediately removed the bandages, and discovered, to my surprise, the edges of the incision a little everted, with considerable redness along them; the case was now merging into one of traumatic erysipelas, and must be treated accordingly. As there were in the hospital at the time some sixty cases of recent wounds of every grade, my first great object was to have this case isolated. I therefore made a requisition on the quartermaster for a hospital tent, had it put up on a vacant lot near the main hospital building, and had him removed into it. Under judicious treatment the erysipelas subsided, and he was once more cheerful. On the twentieth of August, at which time I was taken down suddenly ill with typhoid fever, he was doing well.

CASE V. Wound of Face and Neck.—J. P., private, of Co. —, —— Regiment P. V., aged 24 years, and of sound constitution, was admitted to Thirteenth Street Hospital, Washington, D. C., July 3, 1862. He had been wounded three days before in one of the battles in front of Richmond, by a shot from a minie rifle. The ball entered immediately above the zygomatic process of the right side, passing downwards and across, coming out on the left side of the neck, directly below the pharynx, producing a partial fracture of the right side of the upper jaw, also cutting the tongue considerably. The ball, in its course, carried a portion of the fractured jaw along with it, which I picked out of the wound of exit several days after his admission into this hospital.

The same difficulty that was experienced in Case III. in regard to the manner in which he should be nourished was encountered in this case. I immediately used the stomach tube, and threw into the stomach sufficient quantities of broth, &c. to nourish him during ten days, at the end of which time he regained sufficient power over the tongue and muscles used in swallowing, and the wound of exit having closed to such an extent that he was able to swallow food in the form of fluids.

The wounds were treated in a similar manner to those of Case III.

As in Case III., articulation was impossible, the use of the slate or paper being the only means of conveying his ideas to persons around him. In the course of six weeks he had so perfectly recovered in every respect that he was sent to Philadelphia as a convalescent. At this time he had become able to articulate almost every word. Passing out of my charge at this time, I never heard of him afterwards.

ART. VIII.—*Poisoning by Strychnia.* By JOSEPH WILSON, M. D.,
Surgeon U. S. Navy.

ON the evening of April 27th, 1864, a stranger from the western train stopped at Brown's Hotel, Erie, Pa., and after registering a false name in the office, notified his desire to go to bed. The next that was heard of him was about three hours afterwards, near midnight, when screams of "murder" and "help" issued from his room, in such a way as to arouse the young men occupying the adjoining rooms. They were not long in breaking open the door, and one of them immediately called me with the information that a young man in the hotel was suffering with dreadful spasms.

I found him lying on his back in terrific convulsions. The heels, head, and elbows were firmly pressed into the bed, in paroxysms in which the body seemed entirely supported on these points. The paroxysms were short, and came in rapid succession—perhaps lasting two minutes, with intervals of half a minute or less. They came on with violent clonic convulsions, in which the muscles of the dorsal surface greatly prevailed over those in front. They quickly became more quiet and steady in their action, and gradually relaxed till the body came in general contact with the bed. The tetanic rigidity remained in some degree till the next paroxysm, which was not postponed more than half a minute. A slight touch of the forehead produced a violent convolution with the suddenness of an electric shock. The accidental touching of his foot produced a like result. Probably the whole surface of his body was thus sensitive; and he was so well aware of it that most of the time in which he was able to speak was occupied in begging not to be touched.

The character of the convulsions, and a drachm vial impressively labelled strychnia, with the well-known initials P. W. (Powers & Weightman) impressed on the top of the cork, left no doubt of the nature of the case. About three-fourths of the contents of the vial had been removed. The remains of a biscuit were on the table near the vial, with white particles adhering to its broken surfaces.

The gentlemen present were intelligent and active assistants and messengers. In the course of a minute one was knocking up the nearest apothecary, and quickly had in his hand this prescription: R.—Zinci sulph. $\frac{5}{j}$; Ipecac. pulv. $\frac{5}{j}$. M. Another followed to the same place, just in time not to intercept the first, and procured this mixture: R.—Tannin $\frac{5}{j}$; Syrup. aurantii, Aquæ, $\frac{aa}{5}$ $\frac{5}{j}$. M. st. Another was in the kitchen, preparing a strong cup of tea.

The first thing available which came to hand was Tr. opii m xxx, which I had in my pocket. This a little diluted I placed in his mouth, and discovered that during the remissions he could swallow pretty well—could make one or two motions of deglutition and swallow as much as a teaspoonful during each remission. Soon after the laudanum was disposed of the ipecac mixture arrived. This, mixed with two or three ounces of water and administered in the same quiet way, did not pass the fauces quite so smoothly, and before it was half disposed of the tannin mixture arrived. Of this he swallowed, without difficulty, a teaspoonful containing about three grains. After allowing a few moments respite, the remainder of the

ipecae mixture was administered and followed by another dose of tannin. Twenty minutes had now elapsed since my arrival on the scene, and probably half an hour since the miserable man had been obliged to scream in his agony.

12.20 A. M.—At this time it was evident that the involuntary muscles were not as yet dangerously involved. The pulse, which had not previously been noticed, was accelerated to about 100, and was otherwise regular, even during the paroxysms. Deglutition was possible during the remissions, though very difficult. The muscles of the larynx acted with all their usual precision during deglutition.

It was soon noticed that warm perspiration was breaking out on the forehead and extending over the body. The remissions were longer—the paroxysms not so violent. The muscles of the chest and neck were not so much affected. The head was lifted from its hollow and a pillow placed under it. The chamber vessel was observed to contain about a pint of coffee-coloured fluid, mixed with a more solid brown material—the whole supposed from its odour to have been vomited, and to contain most of the strychnia. This circumstance, with the evident improvement of the symptoms, changed a vague hope into a confident expectation of his recovery. A portion of his history was learned, his name, the names and address of his family, &c. He had purchased the strychnia at Toledo, supped at Ashtabula—drinking coffee and pocketing bread, the remains of which were found in the room. He is twenty-two years of age.

He continued to take a dose of tannin about once every twenty minutes while the convulsions lasted. A cup of tea was taken by the teaspoonful. This was accomplished the more readily, as he complained much of thirst and burning in the throat; probably partly due to the sulphate of zinc which he had taken.

1 A. M.—Symptoms are all better; no vomiting as yet. Took ipecac 3jss. Vomiting in about half an hour; evacuated nearly half pint of straw-coloured fluid.

2 A. M.—Continued to improve. Hamstring muscles rigid. Muscles generally relaxed, except an occasional shudder.

3 A. M.—Continuing to improve, he was left in charge of the night watchman.

10 A. M.—With some persuasion and assistance got up and sat on the side of the bed. He was unable to hold a spoon in his hand, but drank from a cup nearly half a pint of boiled milk, thickened a little with farina, and he approved of its flavour. His hands were partially paralyzed, so that he was not able to hold anything between the thumb and fingers. But he held the cup awkwardly between the two hands, as a bear might do. He complained of great muscular soreness, principally of the muscles along the spine.

2½ P. M.—About fifteen hours after swallowing the poison, his brothers having arrived to take him home, he got up and stood alone, and with some little assistance dressed and walked down the stairs of three stories to the omnibus which was to carry him to the railroad station. His home is about thirty miles distant on the line of the railroad.

The chief point of interest in this case seems to be the rapid and steady recovery after the ingestion of the large quantity of strychnia supposed—forty grains. Was it due to coffee taken at supper in the evening? Time enough had elapsed for most of the coffee to be absorbed from the sto-

mach. Was it due to the manner in which the poison was taken? It probably was swallowed rolled up between morsels of bread, so as to give the least possible offence to the palate. We may fairly attribute the recovery in some degree to this circumstance; for if the vomiting occurred promptly it must have evacuated most of the poison before it was dissolved or detached from the bread. We do not know how much of the result to attribute to each of the remedial measures employed. They were administered pretty much altogether, and the improvement was observed, and was steadily progressive almost from the first moment.

ART. IX.—Report of a Trial for Malpractice in the Court of Common Pleas of Perry County, Pennsylvania. By ISAAC LEFEVER, M.D., one of the Associate Judges of the Court.

Mary Jane Colyer, who is a minor, and sues by her next friend and father Nathan Colyer, <i>rs.</i>	No. 28. August T., 1863. Summons in Trespass in the case.
Drs. Philip Ebbert and Patrick M'Morris.	Defendants plead Not Guilty.

Attorneys for Plaintiff—

B. F. Junkin, Esq., W. A. Sponsler, Esq., of New Bloomfield, Pa.	Ninth Judicial District of Pa.
For Defendants—	Hon. Jas. H. Graham, President Judge.
Wm. H. Miller, Esq., of Carlisle. C. J. T. M'Intire, Esq., of New Bloomfield, Lewis W. Potter, Esq., " "	

Sponsler for Plaintiff.—The case in which you have just been sworn is one of vast importance. *Mary J. Colyer vs. Drs. Ebbert and M'Morris.* Cause of Complaint. Father lives in Penn Township, Dr. Ebbert also in Penn Township, and Dr. M'Morris in Buffalo. In January, 1858, Mrs. Colyer was confined—sent for Drs. Ebbert and M'Morris. Through alleged misconception of duty during labour or without cause they amputated the arm of the child. There was, what the doctors called, an arm presentation, and before the child was born they cut one arm off, thus maiming the child for life. For this conduct this suit is brought for damages. Some of our witnesses are ladies; they are disposed often to tell counsel as little as possible. We can only give facts. Dr. Ebbert was sent for in the evening—staid till 2 or 3 A.M. next morning. The arm presented; from this time until 11 or 12 o'clock he allowed the woman to lie without any effort to relieve her. Dr. M'Morris came at this time. First thing he did was to cut off the arm, and broke the bone. Child was then born by effort of nature. Physicians were of no use but to cut off arm. When you hear the evidence, you will render just such a verdict as is right in law.

Evidence for plaintiff.—Mrs. Elizabeth Keel, sworn. I knew Mrs. Colyer, wife of Nathan Colyer, in her lifetime. I was present when she was sick. Remained until morning, went home about daylight, and was at home about

an hour, and then went back again. I then remained until about 11 or 12 M. Mary Jane was born when I was absent. Dr. Ebbert came about an hour after I got there the first time. Mrs. Colyer was in bed from the evening until the next morning. According to best of my recollection, between 3 and 4 A.M. the arm came into the world. Dr. Ebbert and I were the only persons there at that time. Dr. Ebbert, when the arm was born, went to her, examined her, and said he could do nothing until another physician was brought. From between 2 and 3 in the morning until I left, between 11 and 12, Dr. Ebbert did not do anything to relieve Mrs. Colyer, "*as I saw.*" On my way home, between 11 and 12 o'clock, I met Dr. M'Morris going to Colyer's. Dr. Ebbert said he wanted no other doctor but Dr. P. M'Morris to be sent for, when arm presented. When I came back again the child was born. When I went home, I remained not much more than half an hour.

Cross-examination.—Arm presented between 3 and 4 A.M. Dr. Ebbert went and examined immediately. He was with her for a while; cannot tell how long he worked with her. Could not see what was done, because bedclothes were over Mrs. Colyer. Dr. Ebbert through the night gave her medicine and tea. When arm presented he gave her medicines; what it was for I cannot tell. Remember Dr. Ebbert said the medicines were given for the purpose of allaying the spasmodic contractions or efforts of the mother. Dr. Ebbert said the contractions were so great he could not get his hand in to turn the child. After efforts made by Dr. Ebbert, he appeared a good deal exhausted. Mrs. Colyer appeared very much exhausted also, and appeared very bad. Vessels were put under the bed to catch drippings, as near as I can tell, immediately after the arm presented. Could hear something dropping through the bed into vessels; could not tell what it was. She was wasting, and appeared to be sinking very rapidly from that time until the child was born. This dropping I heard at times until I left. Sounded like a woman flooding—but whether it was blood or what it was, I cannot say. I was here at the last court, and was examined in M'Intire's office. Then said I saw the bed was very bloody—it was bloody. The bed was very wet—could not say it was all blood. There was present Sallie Murphy, a sister of Mrs. Colyer, who attended mostly to her. She came between 9 and 10 A.M., and after that did most of the attendance. Do not remember of seeing blood on floor—it might have been so, but may have slipped my memory. Sallie Murphy is now out west somewhere. Mrs. Colyer died last October a year.

In chief, resumed.—Mrs. Colyer had seven children in all before she died. Mary Jane was the youngest. At the time of presentation of arm, do not recollect that Dr. Ebbert took off his coat or rolled up his sleeves—might have done so. Saw Dr. Ebbert make but one examination after arm presented. Cannot remember distinctly when this occurred.

Cross-examination resumed.—I was not in the room all the time. I was out and in the room. Dr. Ebbert might have made more than one effort.

Mrs. Sarah Smith, sworn.—I was at Mrs. Colyer's when the arm was taken off. Dr. P. M'Morris took the arm off. Dr. Ebbert was there at the same time. M'Morris tried to turn the child, but said he could not turn it. From the time the arm was taken off until the child was born was 15 minutes. Dr. M'Morris turned the child.

Cross-examination.—Before arm was taken off Dr. M'Morris made a strong effort to turn the child, and said that he could not. At the time

Dr. M'Morris made this effort and failed, Mrs. Colyer was sinking very fast. At this time Miss Murphy put water into the mouth of Mrs. Colyer, to keep her revived. Mrs. Colyer plead with Dr. M'Morris for God's sake to take the child away and save her life. Mrs. Colyer said she believed the child was dead. Child was still-born, was laid by, supposed to be dead.

In chief resumed.—He amputated the arm with a knife, and then broke the bone. After the child was born, he took a saw and sawed the bone off. They used a carpenter's saw—a fine-tooth saw. Misunderstood former question. Dr. M'Morris tried to turn and failed before arm was amputated, turned afterwards and delivered it in about fifteen minutes.

Mrs. Mary Ann King, sworn.—Was at Mrs. Colyer's the night Mary Jane was born. Went there after the child was born. She was born on New Year's day—was six years old last New Year's day. Child is living, and is here.

Dr. W. W. Rutherford, sworn.—Reside in Harrisburg. Am a physician, and have been in practice over thirty years. I have heard the testimony; from that testimony I do not see anything that was accomplished in the way of delivery by the removal of the arm. I would like to state an impression, which is this: I do not believe that the gentlemen would have removed the arm, had they not been under the impression that the child was dead. I do not know the motive for removing the arm, unless it was to facilitate the operation of turning. The removal of the arm at the point it was removed would not, by any possibility, facilitate that operation. The practice in those cases is perfectly settled and fixed over the whole civilized world—it is to turn the child when an arm or a shoulder presents. The point is to watch and take advantage of the favourable moment to execute that movement—the operation of turning, I mean. If the mouth of the womb is tolerably dilated, soft, and dilatable, the membranes not ruptured, the shoulder presenting, then you introduce your hand into the uterus, and in introducing your hand, the bag of waters is usually broken, you seize the feet of the child, turn, and deliver it, feet foremost. Universal practice, if it can be adopted.

(Child exhibited, now in its seventh year; stump now about two inches long.)

If the membranes have ruptured spontaneously, there are some circumstances which will render it difficult. I have given you the most favourable aspect, the time of election. If the membranes have ruptured spontaneously, the waters run off, and the arm has descended, you take the earliest opportunity after this occurrence to introduce your hand, to seize the feet, turn the child, and deliver. If some time has elapsed between the rupture of the membranes and the protrusion of the arm previous to your being called, the womb may be so much contracted on the child, so tightly girthed upon it that it may be difficult to get the hand into the mouth of the womb so as to turn. The active contractions of the womb, the waters having run off, may make it dangerous for you to attempt to introduce your hand, the contractions of the womb being vigorous. The contractile efforts are greatly increased by attempts to introduce the hand. Fatal injury might result—a rupture of the uterus might occur. The standard practice in such cases is to reduce the irritability of the general system, and the local powers of the womb. If the patient is of a full sanguine temperament and plethoric, you bleed, and bleed largely. If this is not sufficient to bring down the power of the womb so as to admit the intro-

duction of the hand, you must use tart. ant. and laudanum, and continue treatment until womb is in such a condition as to allow you to introduce the hand. When you accomplish your end sufficiently, and have reduced general and local irritation, you introduce your hand, and turn and deliver the child. This purpose can, in almost every case, be accomplished by the means I have indicated. Modern science, however, has furnished us very recently with a remedy which enables us to succeed almost invariably in such cases—I mean anaesthetics. This remedy has been known for eighteen or twenty years. I think I have given it fifteen years ago myself. To my mind there is a strange point in this case. It is this: that at the same time there was exhausting hemorrhage, there was rigidity of the womb—two things utterly incompatible. I do not see that anything could be gained by removal of arm at the point it was removed. In ancient times they removed the arm at the shoulder to get the space occupied by the shoulder. Practice of amputating the arm at the shoulder has long been abandoned, and the practice never was to amputate at any other place. This is the standard practice taught in medical works. There might be cases where arm is presenting that it would be difficult to tell whether the child is living; we generally can tell. Mothers are often deceived as to whether the child is alive or dead.

Cross-examined.—Chloroform is not so dangerous as formerly; I never use it; I use ether; have been using it for the last fifteen years; use it altogether; never saw any bad effects from it; never had a case of arm presentation accompanied by hemorrhage before delivery; would not consider it added to danger, because you have the very means you want to reduce irritability of general system. Instanced a case of placenta praevia.

Dr. James King.—Live in Harrisburg; a physician; practised since March, 1838; I am now in State service, Surgeon-General of Pa. Have heard testimony of witnesses (of ladies). (Was conduct of Drs. E. and M. proper?) Evidently in an arm presentation indications are to turn into a footling presentation, and deliver by the feet. In an arm presentation, the child necessarily lies above brim of pelvis, head at one side, and hips at other; delivery is impossible, because length of the body of child is greater than width of pelvis; must bring one or other extremity of child into relation with pelvis. Question, then, is whether bring head or feet into cavity of pelvis. The practice which I believe to be correct is to bring feet down; head then descends. In this case, if election could have been made, the time to turn was just before the arm was born, because then, in all probability, the membranes burst, waters escaped, and with them the arm was thrust into the world. Before womb has emptied itself, and contracted upon child, there is this great space, when turning can be effected with facility. If the choice could not be made then, it is because the os uteri was not dilated or dilatable sufficiently to admit the hand. While that was the *probable* condition in this case, yet I am not *sure* that it was, because the evidence does not satisfy me that the womb was dilated or dilatable. The uterus not being dilated or dilatable, it would be duty to wait till it became so, using such means as Dr. Rutherford has detailed (though I am not in the habit of bleeding myself), to relax the parts, waiting as long as you can with safety—as long as no signs of exhaustion are present. The hemorrhage as it occurred, as shown, and the fact of the delivery of the child alive, enforce the conviction on my mind that turning, at the time it was performed, should have been made without the amputation of the arm. I cannot see

how the presence of the arm obstructed the delivery, nor any advantage gained by cutting it off, for this reason, that the difficulty in introducing the hand to bring down the feet is not in the presence of the arm, but from the contractions of the womb. Lest any undue weight should attach to my opinion, I beg leave to say that I have performed the operation of turning in but one single case. That was a case of twins—one born, the other was lying across the womb for about twenty-four hours before I was called; I succeeded in turning, and delivered. The only other case I saw was in a twin case at four or five months; here had nothing to do but to witness expulsion; children small. As to use of means, I refer to means to relax uteris, mentioned by Dr. Rutherford. I have used chloroform and ether for years, and am fond of them, but many eminent and distinguished men are opposed to their use. Would have used the remedy in this case, but would not hold professional brethren responsible when not used, because not universally adopted; would use anodynes, morphia, &c. Hemorrhage favours dilatation of the womb; would be a little afraid of uterine hemorrhage before delivery, but still would expect it to produce relaxation; would rather have the case without it.

Cross-examined.—When there is uterine hemorrhage, should deliver as soon as possible; should hesitate between mother and child—a very serious question; do not wish to discuss which should be sacrificed. Hemorrhage increased the danger; if child died, I would make short work: I would not take mother's impression as to its living; have not attended obstetric cases, except perhaps two or three, within last three years; have not read an entire chapter in an obstetric work in that time.

In chief.—Usually can ascertain whether child is living or not, by sounds of foetal heart. Previous births have no tendency to facilitate births when there is an arm presentation, but usually have the effect of facilitating the overcoming of rigidity; no theory about protruding arm likely to hook on anything, nothing in books about it.

Dr. E. D. Crawford, sworn.—Am a physician, and have practised nearly twenty-one years. The general principles received have been fully laid before conrt; duty of attendant to make examination as soon as possible, and discover presentation; should turn in arm presentation; in my practice usually have not much difficulty in turning; never had any difficulty from presence of arm, but had difficulties from rigidity of os uteri; in present case, amputation did not do good; some advantage might be gained by amputating at the shoulder-joint; to relax, the use of chloroform and ether is not general in country practice; medical testimony as to their use is conflicting; weight of testimony is in favour of the use of ether more particularly; anaesthetics ease pain, and calm irritation; previous easy births is not certain evidence that children are born more readily afterwards; evidence is certain of a good pelvis; turning, when it was done, is evidence that it might have been accomplished previously; frequently it is a difficult matter to tell whether a child is living or not; testimony of mother useless; one positive proof, which is prolapsus of cord, when it is cold and pulseless; no use of amputating when it was done; arm cannot hook anywhere outside the vulva.

Cross-examined.—An exceptional case might arise, where turning could not be accomplished; prudent practitioner will rarely assume the responsibility alone.

Mrs. Keel.—Saw Mrs. C. after birth of child; seemed very weak; did

not see her previously; confined to bed about three weeks; was a woman of ordinary health.

McIntire Opening for Defendant.—Case in which we are now engaged presents many new features. It is a suit for malpractice. Such cases should never be brought into court. In obstetrical cases they do not call in persons to witness what is going on; all such cases are very delicate, and should not be known outside the lying-in chamber. [Drs. Ebbert and M'Morris are both graduates in medicine, and have had over thirty years' experience in practice.] Dr. Ebbert went as a physician, feeling his full responsibility, and desired to do his duty; found her in labour; did all he could to deliver and relieve. All was done confidentially; none but those present knew of it. By request, he lay down to sleep. When called, he found arm down, and mouth of womb rigid. Then he resorted to relaxants, to reduce rigidity, so as to be able to turn, but could not do so, and the woman began to sink. After his efforts were fruitless, he called Colyer, and asked for another physician. Sent for Dr. P. McMorris. When he came, he found the contractions so powerful that he could not turn, after every effort, the woman flooding greatly; the object being to save the mother, they removed the arm, then there was room for the child to be turned, and it was born. The child was stillborn, but revived. Here was shown great care, from the fact that the child and the mother both lived. There was no suit brought until Mrs. C. was dead, because she would not hear of it. Under the circumstances, Drs. E. and M. did all they could. The case has no parallel on record, viz., arm presentation and pre-partum hemorrhage. Exhausting hemorrhage, and yet mouth did not relax, so that the hand could be introduced. Both are respectable physicians, having been many years in practice.

Mrs. Elizabeth Wilkinson, sworn.—Dr. E. attended me in confinements.

Defendants offer to prove by witness that Dr. E. attended in confinements; that there was in her case an arm or shoulder presentation, and that Dr. E. successfully turned the child and delivered, thus proving scientific knowledge and skill in profession, and his ability to perform the operation of turning.

Plaintiff objected.—It is a presumption of law that, where a man exercises a learned profession, he exercises it rightly and properly; and that this is an offer to prove an induction of law which exists without proof. That the question trying is, that whether in this particular case the defendants used ordinary skill and diligence in the delivery of the child, which cannot be established by proof of skill and diligence in another case.

Objection sustained; evidence must be confined to particular cases. Offer overruled, and exception noted.

Dr. David Gilbert, of Philadelphia, sworn.—I am a general practitioner, and have practised over thirty years; was a member of the faculty of the Medical Department of Pennsylvania College for fifteen years; during the first ten years occupied the chair of Surgery, and the last five the chair of Midwifery and the Diseases of Women and Children.

The testimony given declares this case to have been one of shoulder presentation. All presentations may be included under three general divisions, viz., of the head, the breech, and the shoulder. These each include different positions. Presentations of the head embrace nearly all the cases; the breech about one in fifty, and of the shoulder about one in two hundred and fifty births. Presentations of the shoulder are the most difficult, and, as a general rule, require the operation of turning, which is more or less

dangerous to mother and child, even when uncomplicated. In a very small proportion of this presentation the child may be delivered by the unaided powers of nature. *Spontaneous evolution* may take place; in this the shoulder and head rise up, and the breech comes down, and we then have a breech case; or the child may, when small, and pelvis roomy, be born without turning, by *spontaneous expulsion*. In this the shoulder keeps its place, whilst the contractions of the uterus force the breech down into the lower strait, and here again we have a breech case. These, however, constitute but a very small proportion of original shoulder presentations.

Hemorrhage before delivery complicated this case. This is one of the most dangerous complications of labour, rupture of the uterus only being equal to it. When there is bleeding before delivery, to any extent—I do not mean an ounce or two, which happens frequently—it is unmistakable evidence that a part or the whole of the placenta has become separated from the inner surface of the womb, to which it is attached. This opens the bloodvessels of the placenta, and the blood of the child escapes and endangers its life, and also opens the bloodvessels of the womb, through which the blood of the mother is lost, thus endangering the life of both from hemorrhage. This is the case in the most favourable presentations, hence, in arm presentations it is much more dangerous, because in this the delivery is not so fully under the control of the practitioner. It is necessary to deliver as speedily as possible, which cannot be so readily accomplished in this as in the other presentations. Statistics show a large proportion of deaths of both mother and child in pre-partum hemorrhage. I have had, since I have been in practice, three cases of hemorrhage before delivery, and have been called in consultation to three cases. In all of these the presentation was of the head, the most favourable, and yet four of the children and two of the mothers were lost. I was called to another case of a neighbouring practitioner, when I practised in the country, who could not be found, in consequence of which some four or five hours elapsed before I saw the patient; when I arrived, the woman was in a dying state; the child also perished. These were all cases of *accidental hemorrhage*.

The hemorrhage in this case now on trial was *accidental*. There are two varieties of pre-partum hemorrhage; the one is known as "*unavoidable hemorrhage*," and occurs when the placenta is implanted over the mouth of the womb. When the body of the womb has enlarged in gestation, and its neck begins to expand, some portions of the placenta near the expanding neck become separated, and bleeding occurs, which is small at first. This takes place usually at the sixth month, occurring at intervals, and becoming more copious as the woman approaches her full term, and is then very dangerous. This is called *unavoidable*, because it will take place in every case in which the placenta is implanted over the mouth of the womb.

The other variety is called "*accidental hemorrhage*," because it is the result of some producing cause in cases where the placenta is implanted in other parts of the inner uterine surface. It may be caused by partial contractions of the uterus—the result of blows, straining, or even mental emotion. This variety is less under the control of the practitioner, and hence more dangerous to both mother and child than *unavoidable hemorrhage*.

Bleeding before birth is very rare; probably, according to statistics, occurs only once in five or six hundred cases. Shoulder presentation complicated by pre-partum hemorrhage is unknown to authors so far as I have

made examination of their works. I have never met with such a case in practice, and have conversed upon the subject with some of our oldest practitioners, not one of whom ever has had or heard of this complication of shoulder presentation. This hemorrhage is so dangerous because it is necessary that a very large amount of blood be furnished by the system of the mother for the growth of the child, and the renewal of its blood. The child cannot be nourished through its stomach, nor is its blood changed from venous or black blood to arterial or red blood by its lungs. For the growth of the child and the renewal of its blood, the placenta or after-birth, as it is called, is provided. This, at or near birth, is about from six to eight inches in diameter, making an area of from thirty to fifty square inches, and is about an inch to an inch and a half in thickness. This is attached firmly to some part of the inner surface of the body or upper part of the womb. The child is connected to the placenta by the umbilical cord. In this cord there are three bloodvessels, two of which convey the venous or black blood from the child to the placenta, and when this becomes changed into arterial or red blood, it is conveyed back in the third vessel to the child. This circulation in the body of the child and the umbilical cord and placenta goes on continually. Anything which arrests it or interferes with it endangers the life of the child. This circulation of the infant is carried on by the action of the child's own heart, and is distinct from the circulation of the mother. The child's heart contracts 120 to 140 times in a minute; whilst the mother's heart contracts only from 60 to 80 times. There is no direct vascular connection between the blood-vessels of the mother and the child; that is, there is no direct opening of any bloodvessel of the womb or of the mother into any bloodvessel of the placenta. If there was such connection, less blood would suffice, and the danger from hemorrhage would be less. The changes which take place at the seat of union between the placenta and the inner surface of the womb are brought about by the process of absorption or imbibition on the part of the extreme terminal, capillary branches of the vessels of the cord; by which they take up oxygen from the blood of the mother very much like fishes take up oxygen by their gills from the water. In this way the infant's blood is renewed, and by a similar process of absorption nutritive particles are taken up from the blood of the mother. Now, in order to keep up this vitalized condition of the blood of the infant, and supply a portion, if not the entire nutriment of the infant, a large amount of blood must be continually circulated in that portion of the womb overlying the placenta, as well as in the womb generally. The womb has now grown, near the period of birth, from an ounce in weight before impregnation to from 24 to 30 ounces in weight—even after drained of blood. As the womb grows its bloodvessels, nerves, &c., enlarge with it; but especially its bloodvessels, which at the seat of the placenta are so large as to be called sinuses or pools containing blood. Into these sinuses the terminal branches of the placenta extend in the form of fringes, and in other places these vessels of the placenta interlock with terminal vessels of the uterus, and thus these tufts of vessels of the placenta, floating in these depots of blood, and other vessels interlacing with vessels of the womb, take up what is necessary for the life and sustenance of the child. When a separation takes place between the placenta and the womb, the delicate membranes which close up these sinuses containing the blood of the mother, and those which close up the vessels of the placenta, are torn, and large quantities of blood, especially from the mother's system, unavoidably escape, and speedily endanger her life. This

bleeding can only be arrested, so as to place the mother and child in a safe condition, by emptying the uterus of its contents. We may rupture the membranes, if not already ruptured, and discharge from a pint to a quart of water which surrounds the child, and thus, by securing partial contraction of the womb, diminish the size of the mother's bloodvessels, but not sufficiently to arrest the bleeding so as to place the woman in anything like a safe condition. The speedy delivery of the child under these circumstances is the paramount duty of the attending physician. When the womb is emptied it will contract, or may be made to contract; and by this process the muscular fibres of the uterus act as living ligatures to all its bloodvessels, and the woman is safe so far as bleeding is concerned, unless, as is occasionally the case, the womb becomes relaxed, and the vessels again open. In an ordinary case of labour, or in any one in which there is no bleeding before delivery, the placenta remains attached until the child is being born; and then as the womb contracts the placenta is safely thrown off, and the vessels are closed without any dangerous amount of bleeding. In exceptional cases where the womb does not contract properly there will be "hemorrhage after delivery"—"post-partum hemorrhage."

Emptying the uterus in every case as speedily as possible is the best means of arresting hemorrhage. There are no other means to arrest bleeding which can be fully relied on. One of the cases to which I was called, the physician, one of our most eminent men, had made use of the tampon; and I agreed to let this remain in the hope that coagula would form and arrest the hemorrhage, as the os uteri was firmly contracted. After some three or four hours, we were hastily summoned, the bleeding again appeared externally, passing by the tampon, labour came on more vigorously, the mouth of the uterus then began to dilate; and as soon as it was possible, we applied the forceps and delivered. The child was dead; and so large was the amount of blood which had been poured out *within the womb* that the patient never rallied. Rupturing membranes, astringents, tampon, &c., are not fully reliable in *accidental hemorrhage*.

It would not be proper to amputate the arm in an ordinary case of shoulder presentation. Should use the means detailed by Dr. Rutherford. Should wait, and can afford to wait, till os uteri is dilated, and then we can turn. It was stated by a medical witness that copious hemorrhage, as in this case, would necessarily relax the mouth of the womb so that the hand could be introduced and the operation of turning be performed. This does not accord with my experience. In several of the cases which I mentioned, notwithstanding the free, and in some cases fatal, bleeding from the uterus the mouth of the womb remained rigidly contracted. In one of the fatal cases to which I was called in consultation, the woman died undelivered about ten minutes after I arrived at her bedside. In this case there was no escape of blood from the womb at all, the bleeding was wholly internal, the abdomen was greatly enlarged, and the mouth of the uterus was closed. The physician in attendance informed me that she had been gradually sinking for four or five hours—that he suspected internal hemorrhage, but owing to the closed state of the mouth of the womb he could not resort to any forced means of delivery.

I would mention in connection with this that in concealed hemorrhage after delivery, the body of the womb fills up with blood, which is retained there by the rigid contraction of the mouth of the womb. In what we call incarcerated placenta, there is violent contraction, not only of the mouth of the womb, but also of central portions of the body of the womb;

this condition involves sometimes the loss of a large amount of blood, yet it is with great difficulty we can overcome this contraction, and deliver the placenta, in order to place the woman in a safe condition.

My friend Dr. Rutherford instanced a case of *placenta prævia*. In such cases the mouth of the womb is usually relaxed, and the hand can be introduced easily. The relaxation here I apprehend is generally present in this kind of cases, because the bleeding, which usually commences during the sixth month of pregnancy, continues more or less, and becomes more violent until the period for delivery arrives. This bleeding, kept up for a period of two or three months, from immediately within the inside of the mouth of the *os uteri*, no doubt weakens the muscular fibre of that portion of the womb, and prevents any forcible contractions.

I am aware that bleeding from the arm is practised in cases of rigidity of the womb; I have practised it myself in cases of full habit; but blood taken in this way from a distant part acts, as we say, derivatively, and may have an influence over the rigidity of the mouth of the womb, which bleeding from its own body may not have. It has appeared to me that in bleeding from the internal part of the body of the womb, the closure of the mouth of the womb is a blind effort of nature, or an abortive effort of nature to arrest the bleeding.

In the case under consideration, the bleeding belongs to the *accidental variety*, not the *unavoidable*; had it been the latter, the arm would not have protruded. It was also mentioned, and the impression seems to prevail generally, that the arm protruded outside of the parts of the mother, at least to the elbow. I have never seen a case in which the hand appeared externally during the first few hours after the arm was discovered to be in the passage. I have been called to cases in which labour existed, and the arm had passed through the mouth of the womb from twelve to eighteen hours, the labour very violent; in these the hand protruded up to the wrist; I mean from the external parts: usually the hand is within the vulva.

It was also stated that in these cases of arm presentation the womb was firmly contracted around the shoulder. Now, in such a case, where the womb is contracted around the shoulder, the woman must have been in labour, violently, for a great length of time, even several days, so that the child must have been, by the long-continued and violent labour, had its form changed from an ovoid to a globular form, and forcibly thrust down into the pelvis.

Dr. Gilbert here explained the position of the child as it lies across the great basin of the pelvis, by placing his open hands on the sides of the mouth of a pitcher which stood upon the council table. His hands represented the expanded iliae, and the mouth of the pitcher the superior strait of the pelvis. He said that, whilst the head of the foetal ovoid rested upon one wing of the haunch-bone, the breech rested upon the other, and the shoulder which presented was thrust firmly against the side of the brim of the pelvis. As the transverse diameter of the superior strait is usually over five inches, it follows that the distance from the brim to the *os uteri*, which occupies the centre of the plain of the superior strait, is two and a half inches, and allowing for its projection towards the centre of the cavity of the pelvis, the distance from the brim on either side of the mouth of the womb cannot be less than three inches. He contended that it followed, therefore, that the forearm only for the first five or six hours of ordinary labour protruded beyond the *os uteri* into the vagina, and

that, as stated, it was only after days of severe labour that the shoulder was thrust down into the mouth of the womb, as represented in ancient works, before the operation of turning was practised.

It has also been said that we had a certain remedy in anaesthetics for overcoming the rigidity of the mouth of the womb. I am sorry that I am again obliged to differ in the views expressed. Anaesthesia, in plain English, means insensibility, want of feeling, and in this consists its great value. The woman under its influence in labour is insensible to pain, but the uterine contractions go on; indeed it is the opinion of some who use it freely that it increases the actions of the womb. I agree with my friend, Dr. King, that no practitioner should be held responsible for omitting its use, since some of our most eminent writers and teachers in midwifery are averse to its use. I have used both ether and chloroform in surgical practice since their introduction, and occasionally in severe cases of midwifery, and have never met with any unpleasant results from their use. I have never used either in cases requiring operative procedures in midwifery which may involve rupture or other injury to the uterus.

This case was at first, to all appearance, an ordinary shoulder presentation, but the subsequent occurrence of hemorrhage converted it into one of the most dangerous in midwifery, to both mother and child. A case like this, without a known parallel in the annals of medicine or in the experience of practitioners, suddenly sprung upon a medical attendant, places him in a most trying position. When we consider the facts brought to light by the testimony—that the month of the uterus had firmly contracted around the presenting arm, that relaxing medicines had been administered during the interval from 4 to 11 o'clock A.M. without effect, that repeated efforts were made unsuccessfully to introduce the hand into the uterus by both physicians, and that the patient was rapidly sinking from loss of blood, which required vessels to be placed under the bed to receive it, I am forced to the conclusion that their prompt decision and speedy action in amputating the arm at the highest point within their reach, to increase the space in the os uteri for the introduction of the hand and effect speedy delivery, to save the almost bloodless mother, who was pleading for her life, was justifiable, and the result proves it; for in fifteen minutes after the amputation was performed, the child was turned, the mother delivered, and both lives saved. The success was such as is rarely had in ordinary shoulder presentations; for in these about one-half of the children are sacrificed, and in pre-partum hemorrhage in the most favourable presentations two-thirds of the children and one-third of the mothers usually are lost.

Cross-examined.—When there is hemorrhage we should deliver as soon as it possibly can be done without doing injury to the mother. If the os uteri is dilated or dilatable, I would deliver immediately when there is pre-partum hemorrhage. I would make frequent examinations and seize the first opportunity. In pre-partum hemorrhage saving the life of the mother is the first consideration, and the life of the foetus, to a certain extent, must be disregarded. It is not easy to determine whether the child is living; when the abdomen of the child presents towards the abdomen of the mother the sounds of the foetal heart are not easily heard. Very often, too, the circulation of the child is enfeebled, especially when it loses blood by separation of the placenta, and then it cannot be heard. Statistics show, and the presumption is, that a large majority of infants in pre-partum hemorrhage are dead.

Does not every respectable practitioner always draw off his coat before he attempts to turn? I do not, although it is recommended by most authors. It alarms the patient, who perhaps is already sinking from loss of blood, protracted labour, and mental emotion. I generally strip up my sleeves under the bedclothes, so that the patient is not aware of it.

If in arm presentation the os uteri is not contracted around the shoulder, why is it that the plates in the standard works on midwifery represent it thus (exhibiting a copy of a work on midwifery)? Answer. These plates are introduced here merely to show the different positions of shoulder presentations, and whilst they do this they are somewhat inaccurate in other points—that arm, for instance, is made to leave the body at about the third rib instead of the point of the shoulder, and it is, moreover, too long—if laid down along the side of the body it would reach below the knee. Hence it extends some distance out of the inferior strait of the skeleton of the pelvis; allow even here for the soft parts, and yet only half of the forearm protrudes. These plates are mostly copied from work to work, and so that they represent the different positions clearly, inaccuracies in other respects are disregarded.

(Dr. Gilbert by consent of court returned to the city.)

Dr. James Galbraith, sworn.—Have practised midwifery over thirty-seven years; have had arm presentations; none complicated with pre-partum hemorrhage; arm presentation with hemorrhage might prove fatal before it could be turned; was called to an ordinary ease of arm presentation some thirty-two years ago in consultation; woman in labour 24 hours; physician in attendance had not been able to introduce hand, the os uteri was so firmly contracted around arm; we took off the arm at the shoulder; we then succeeded in turning; the child was dead, but the mother's life was preserved; I felt satisfied that the child was dead previous to the amputation.

In another case, which had been under the care of a midwife, I suppose, 24 hours. Tried to turn, but could not; woman was greatly exhausted; after using all justifiable effort in vain, I amputated arm at shoulder; I then was able to get my hand up, and delivered; would not bleed when there is exhaustion; was satisfied in this ease that child was dead; do not think I could have delivered if arm had not been taken off; have turned frequently in arm presentation; the general rule is to turn; I have known women to die from mere exhaustion where there was little or no loss of blood.

From the evidence of the ladies in this case, I think Doctors Ebbert and McMorris were justifiable in taking the course they did; there was a necessity for prompt action; had they given relaxants and waited for further effects, the patient probably would have died undelivered.

Removing the arm where it was done was an advantage; taking off the arm, too, may have relieved compression of child's brain by a little loss of blood, and saved its life; arm presentations are always dangerous; child usually is lost.

Dr. S. Stites, of Perry Co., sworn.—Have practised 14 years; have had two cases of shoulder presentation, without pre-partum hemorrhage; never knew of such a case until I heard of this one; hemorrhage and contracted os uteri are not incompatible; in one of my cases I turned and delivered—the child was dead; in the other I could not turn; the ease becoming serious, I had Dr. Case sent for, and we finally took off the arm at the shoulder, supposing the child to be dead, and then turned without difficulty; the woman died from exhaustion in five hours afterwards.

I have heard the testimony in this case, and believe that Drs. Ebbert and McMorris, under the circumstances, "done right in doing what they did."

Dr. J. H. Case, Liverpool, Perry County, sworn.—I have been a practitioner of medicine and midwifery about 38 years; have had two arm cases of my own; never had an arm case complicated with pre-partum hemorrhage; in such a case I would deem it my duty to cut off the arm and deliver woman as speedily as possible; hemorrhage is not likely to stop so long as child is in the womb; in one of my cases turned and delivered, child was dead—the woman recovered; the case was complicated by puerperal convulsions; failing to be able to turn, performed embryoleia; woman died in six hours afterwards; I was with Dr. Stites in the case detailed by him in his testimony; I heard the testimony in the case now before the court; from the condition of Mrs. Colyer, as described by the witnesses, I consider defendants justified in amputating the arm.

Dr. R. P. Hooke, of Perry County.—Heard evidence of ladies; from circumstances detailed consider defendants justifiable in amputating as they did.

Dr. D. B. Milliken, Landisburg, Perry County.—Practised 12 years; never have had or known of a case of arm presentation complicated by pre-partum hemorrhage; either by itself is dangerous—united must greatly increase the danger; have had two cases of shoulder presentation; in the first, the child was still-born—the mother recovered; in the second case did not succeed in turning, and the child was born by *spontaneous expulsion*; it did not live, but the mother recovered; heard the testimony in this case, and from this believe that the defendants were justified in performing the operation.

Cross-examined.—Removal of arm seldom necessary; I would amputate as high up as possible; if traction was used before operation, the stump would recede after the arm was amputated.

Dr. S. Tudor, of Perry County, affirmed.—Have practised for 33 years; never had shoulder presentation complicated with pre-partum hemorrhage; had one difficult case of this presentation in consultation; saw it 12 hours after arm presented; mouth of womb firmly contracted around arm, could not relax it nor introduce hand; remedies were used to relax without effect; bleeding and other usual remedies all failed; failed frequently to be able to introduce my hand, so also the practitioner whose case it was; woman became greatly prostrated; we agreed upon amputation of the arm, after which, with much labour, I succeeded in introducing my hand and turning; child was dead born, and woman died next day from rupture of the womb.

Heard most of the evidence given in this case; there being arm presentation, hemorrhage, and sinking, the defendants were justified in amputating the arm; think I would do so under similar circumstances.

Dr. J. E. Singer, of Newport, sworn.—I have been 30 years in practice; have had cases of arm presentation; never had arm presentation complicated with pre-partum hemorrhage; in one case spontaneous evolution took place; in another I was unable to turn, and after two other practitioners were called in, we decided that evisceration was the only means of saving the woman; she recovered.

I heard the evidence of the ladies in the case before court; hemorrhage occurring as it did, I would have resorted to any means to get the child away; I would bring the arm down as far as possible before amputating it.

Cross-examined.—Would not amputate arm simply to make room in the

vagina ; hemorrhage is not of itself evidence of relaxation of the mouth of the womb.

Dr. Alfred Harman, of Carlisle, affirmed.—Have been 28 years in practice ; never had a case of arm presentation complicated by pre-partum hemorrhage ; this would be a most dangerous complication ; heard the evidence of the ladies ; from their statement the case was a desperate one. If I could not introduce my hand into the womb, I would cut the arm off, and thus save the life of the mother ; I was subpoenaed by the plaintiff in this case.

Dr. S. B. Kieffer, Carlisle, sworn.—I am a physician and in practice for thirteen years, and, in a certain sense, about one year in hospital before that. My experience is, that the theories laid down in the books for the management of this particular form of presentation, in ordinary cases, as they present themselves to us, are correct, and also practicable. The indications are, after you have ascertained you have a presentation of hand, or shoulder with the hand ; if called early, and a kindly disposed os uteri ; if there are no undue contractions of muscular fibres of the womb before rupture of membranes, whether hand of child outside of the cavity or not, by taking proper position relative to your patient, and by carefully introducing hand to os uteri, and persevering, you can almost always get hold of feet and deliver. Have had some, but not very much experience in arm presentations. Had two of my own, and called in consultation three times. First case called early ; membranes entire ; os uteri pretty well dilated ; fingers of the child projected about an inch and a half ; lady in labour about nine hours. Had great difficulty to determine whether it was hand or foot ; concluded to wait a few minutes so as to determine. Soon was a severe pain, and arm came down to elbow outside of womb, not outside of body. I immediately anointed my hand and arm, passed it up by side of child without any difficulty ; passed readily into womb ; grasped feet and delivered. Child dead ; patient recovered. Second case : Sent for in consultation. Had been in labour for hours. Hand in vagina nearly to external parts. Proceeded to turn ; did so without difficulty. Child living and patient recovered. Third : Was called about six or seven miles from town. Labour had existed for about twenty-one hours ; she was nervous ; examined ; found shoulder presentation. Soon it changed to neck, shoulder, and head. Os uteri about size of half dollar, firm and rigid. Thought I would wait and would see ; os uteri did not dilate any. Gave an enema of very warm water. Could not bleed, patient was worn down already. Applied warm fomentations, and ordered hip-bath, and did succeed in relaxing patient's system, but "the mouth of the womb remained as firm as cartilage." I then first introduced my hand into vagina, and endeavoured to introduce my hand into os uteri, but os uteri firm and unyielding. Gave morph. freely, and ipecac. ; repeated warm hip-bath. Remained until evening. In evening os uteri was somewhat dilated. I only now could determine presentation ; again introduced hand. Failed in getting my hand into womb. Dr. Dale came. Said, "Doctor, turn the child." After half an hour's perseverance by Dr. D., he failed. Next morning we sent for Dr. Bachman. Told him our trouble. He tried to turn. Could not. What was done ? Patient seemed to fail ; indications of insanity. Finally perforated head. Patient very ill for a week, but finally recovered.

Dr. K. prefers amputation an inch or an inch and a half below the shoulder-joint, if he cannot get up farther.

Dr. Samuel Stites recalled.—Had a conversation with Colyer about his

bringing this suit. I cannot give the exact wording. We met in the court-house yard on day before yesterday. I asked him if he was encouraged by any physicians to bring this suit, and he said he had talked with Dr. Rutherford, from Harrisburg, and the doctor had told him that these defendants were guilty of malpractice, and that Dr. R. said he could prosecute or could get damages from these men, viz., Drs. Ebbert and McMorris. He told me others advised him, but did not mention names.

Defendants close.

Plaintiff's rebutting evidence.—Dr. Rutherford recalled. Perhaps between six and seven years ago, Colyer came to me, stated case. I replied I could not give him any opinion until I knew all the facts. Had no conversation with Colyer since that time. Dr. R. continued to talk for some time, during the course of which he said he would not hold a country physician responsible for not using anaesthetics. If a man is only called upon once or twice in his lifetime to turn a child, he is not responsible for his failure. It cannot be expected that he should be able to do so. Though the doctor had said that the practice of amputation had long since been abandoned, and another practice "fixed over the whole civilized world," yet he stated that he *had* performed the operation during the last ten years, and went on to describe it, and the facility with which it could be done, even within the uteris, at the shoulder-joint. In one case he said he amputated the arm in order to get room. Where arm is amputated the universal experience of the world is that the child is born dead.

After hearing Dr. Rutherford, one of the plaintiff's counsel rose and admitted that from the testimony given the weight of evidence was against them; that under the present aspect of the case he would not ask a jury for a verdict, though he believed that he and his colleague had done everything which lay in their power to gain the cause for their client, and ask the court to permit them to take a *non-suit*.

Judge Graham, in reply, stated that in his opinion the case had been managed with great ability on both sides, and that everything had been done which could have been expected. But as to the aspect of the case, he coincided with the opinion just expressed by plaintiff's counsel, and accordingly directed a non-suit to be entered.

ART X.—*Description of a Syringe for Washing the Auditory Canal.*
By W. S. W. RUSCHENBERGER, M. D., U. S. Navy. (With two woodcuts.)

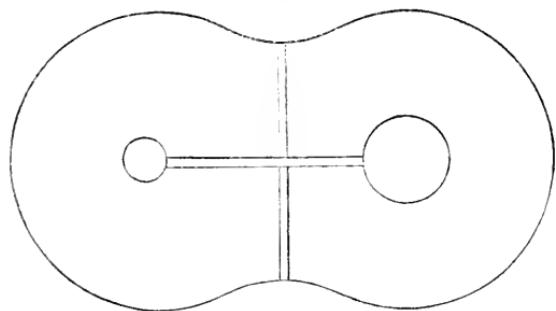
WASHING out the ear with a syringe of a capacity of one or two ounces is attended with sufficient inconvenience to create some reluctance to resort to the operation. The liquid returned from the meatus almost always soils the clothing of the patient, in spite of a guard of towels placed around the patient's neck. Then it is sometimes necessary to fill the syringe and insert it into the ear many times, always at the risk of giving pain, especially when the instrument is used by an unskilled hand. Even when assisted by the ear-spout and syringe described by Mr. Joseph Toynbee, in his excellent work on "The Diseases of the Ear," there is required a vessel from which to fill the syringe, and a basin is to be held to receive the washings.

An instrument was manufactured by Mr. Kuemerle, in Philadelphia, several years ago, known as the "tub syringe," which obviates the necessity of swathing the neck of the patient to avoid soiling his apparel, as well as frequently withdrawing and again inserting the nozzle of the syringe into the ear. A chief objection to the instrument is that the same liquid, no matter how much it may be soiled in the course of its use, is again and again thrown into the ear.

To obviate objections of the kind alluded to, I caused an instrument to be made which has been in almost daily use during several months. This experience has been entirely satisfactory, both to the several patients and to the assistants who have employed the instrument.

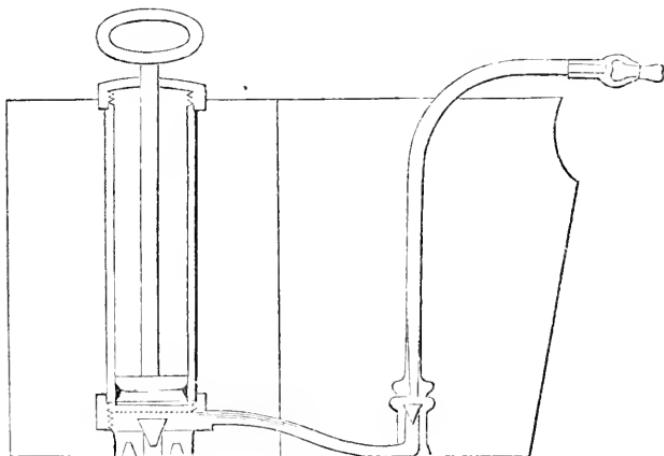
The following description, with the annexed diagrams, will enable the reader to judge of the advantages and disadvantages of this modification of the "tub syringe":—

Fig. 1.



The bottom of the tub (Fig. 1) is somewhat fiddle-shaped. Its longest diameter is five inches; its shortest, which is at the middle, is one and a

Fig. 2.



half inch, and the diameter of each extremity is two and three-eighths inches. A vertical partition, placed at the narrowest point, divides the

tub into two apartments, of nearly equal capacity, of about six fluid-ounces.

The depth of the tub (Fig. 2) on the side in which the syringe stands is three inches, and of the opposite extremity three and a quarter inches. The sides are perpendicular, except where the notch is cut : there it is made to flare or expand so far that the long diameter of the top of the tub is five and a half inches. It is supposed that this configuration facilitates the introduction of the nozzle and the application of the instrument against the neck beneath the lobe of the ear.

The internal diameter of the pump or syringe is three-quarters of an inch, and the length of the barrel two and a half inches. This is received by a screw joint into a base three-quarters of an inch high, which is firmly fixed to the bottom at the centre of the compartment in which it stands. This base contains a conical valve, and a movable perforated plate which is interposed between the valve and the bottom of the piston. The shallow chamber which exists between the under face of the plate and the superior surface of the valve is connected by a slender tube with the exit-pipe and nozzle. Openings are left at the bottom of the base of the pump for the admission of liquid from the tub into the syringe whenever the piston and valve are raised.

The base of the exit-pipe, three quarters of an inch high, is firmly fixed at the centre of the second compartment. It contains a small conical valve, like that of the syringe, which closes when the piston is raised, and opens when it is depressed. The exit-pipe is screwed upon its base above the valve. It rises perpendicularly to near the top of the tub, and then is curved so as to project horizontally about a quarter of an inch above the compartment in which it stands. It is connected with a nozzle half an inch long by a piece of vulcanized rubber tubing, so as to form a universal joint which is easily moved in any direction.

The notch, placed beneath the nozzle, is an inch and a quarter wide at top and three-quarters of an inch deep.

While using this instrument there is no necessity of employing an ear-spout or basin to receive the washings as they flow from the meatus. The liquid thrown into the ear is always kept separate from what escapes from it. With ordinary care there is no risk of soiling the patient's clothes. The capacity of the compartment for receiving the washings is rather greater than the other, in order to obviate the chance of overflow.

My instrument is made of brass ; it could be manufactured of hard rubber or of pewter.

TRANSACTIONS OF SOCIETIES.

ART. XI.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1863. June 3. *On Heart Disease in the Army.*—DR. HENRY HARTSHORNE made the following remarks on this subject:—

Among the chronic affections of soldiers, which are best studied in hospitals remote from the field, is one which does not seem to have met, as yet, with full appreciation by medical officers, inspectors, and pension surgeons. If the view which I hold be correct, the subject is of enough importance to deserve careful consideration by all who are interested in the health of the army. The affection to which I allude may be designated as *muscular exhaustion of the heart*. Although examples of it occur in all our military hospitals, I am acquainted with but one distinct published recognition of it; in the address of DR. A. Stillé, before the Philada. County Medical Society, delivered and published in February, 1863. Although DR. Stillé designates the disorder described by him as “palpitation” of the heart, his account otherwise agrees so well with my own observations, that I infer a general identity of the cases studied by us.

To be distinct in my description, it will be necessary first to say, that, during a seven months' term of service in an army hospital, attending in a ward averaging about 80 patients, I have met with the usual variety of cardiac affections. Acute endocarditis and pericarditis were the most rare. Of valvular disease a few instances presented themselves; but knowing the lax manner in which, at the beginning of the war, the examination of recruits was conducted, it was impossible to judge satisfactorily of their antecedents or origin. Dilatation of the heart, with or without the signs of thickening of the walls, occurred in quite a number of cases; especially dilatation without evidence of true muscular hypertrophy. But, although a portion at least of these cases ranged themselves under the same probable causation as those to which I wish to call particular attention, yet the large *majority* of examples of heart-disorder, under my observation, were not cases of either form of enlargement of the heart. Exclusive, then, of a very few instances of valvular disease; of a few more of pericarditis with effusion; and several of dilatation with hypertrophy, and of dilatation with attenuation; there yet remained two other classes of heart derangement in our army wards. One, not rare anywhere, was *palpitation*, or functional disturbance of the heart's action, from sympathy with irritated stomach, from nervousness, abuse of tobacco, &c.; a symptom frequently connected, in our cases as elsewhere, with anaemia. But, lastly, the largest number of all must be separated from all of these, and may be properly designated, so far as I can understand them, as cases of *cardiac muscular exhaustion*.

The symptoms of this were, rapidity with comparative febleness of the pulse while the patient was at rest; great acceleration of the heart's move-

ment on the *slightest* exertion; an impulse which, in proportion to its acceleration, was rather below than above the normal average of force, and was sudden and short, not heaving; dyspnoea or "shortness of breath" after moderate exertion, especially if continued. The general condition of the body accompanying these symptoms was not uniform. Mostly anaemic at first, or eachæmic, as were nearly all the men sent to our hospitals from the army of the Potomac during the latter half of last year—the cure of the anaemia was not nearly always the cure of the heart affection. There remained with us, after several months, a number of men, some of whom had the *aspect* of average health; with sufficient flesh, fair colour, and even tolerable muscular strength; but with a pulse of 85 to 95 when at rest, and running up to 120 or 130 upon walking slowly a few yards; and overcome altogether by standing for a few hours with muskets as hospital guards, or acting even as nurses or messengers. The physical signs observed in these cases were as follows: No extension of dulness of resonance on percussion (I mean now in the *majority* of these cases; having already mentioned that several instances of dilatation occurred in the same wards) beyond the usual limits, and sometimes being even less than natural; impulse, as already stated, without unusual force, and especially deficient relatively to its acceleration; having also, a short, although hardly a jerking movement, but quite different from the *heaving* movement of concentric hypertrophy, and not lifting the ear or stethoscope so much even as in many cases of transient functional palpitation. Sounds of the heart, *free from murmur* in almost all the cases; in all that large number in which no complication could be supposed to exist with the cardiac exhaustion. Anæmic murmurs, even, were quite rare. There was present, however, a comparative deficiency in duration and loudness of the first sound, and an approximation of it in character to the second sound; similar to that which is described by Stokes (although the same sign had been observed by Laennec, and was still more clearly defined by Louis) as occurring in softening of the heart in typhus or typhoid fever. In instances in which great debility, from intermittent disease, existed, the sounds were both quite deficient in strength, while the impulse was very feeble, and the rapidity of the heart's action was extreme. The last case in which my attention was called to these signs was that of R. K.—, a member of the Anderson Troop, of this city, who, after long and severe hardship and exposure, was attacked with typhoid fever followed by acute phthisis, and died under my care in May, 1863. The pulse of this patient, for *more than a month* before his decease, would have been pronounced by any physician to be that of a *moribund* person; of one who could not live forty-eight hours, and the heart sounds and impulse were correspondingly rapid, short, and weak. Having, from previous attendance, some years since, known his ordinary pulse which was not peculiar, I concluded that this state of his circulation must be owing to a condition of the heart identical with what I have described as occurring in our hospital patients, and which became familiarly known among us at the hospital as "*trotting heart.*"

Autopsic examination was not available to any extent in the investigation of these cases; since the affection, in the hospital at least, was not mortal. In inspecting the bodies of some patients, who died from other causes, whose circulatory apparatus had presented the symptoms above described, we found the heart attenuated, flabby, and pale. No minute examination of it was made in either of these, our attention being called to the organs

more especially involved in them. While thus without direct evidence of fatty or other degeneration of the heart in the typical cases considered, I entertain no doubt of the affection being essentially of an *atrophic* character, of which such degeneration would be a natural sequence or attendant, if circumstances did not favour restoration to health.

Allusion has been made already to the analogy suggested by the description by Dr. Stokes, of softening of the heart in typhus fever. The most important difference between this and soldiers' heart-exhaustion is probably connected directly with the dissimilarity in causation, in all respects except in the induction of atrophy in both. In typhus or typhoid fever, the morbid state of the blood—the *pyrosis*—alters the nutrition of the heart as well as its action. In the soldier, the heart is injuriously affected by long-continued over-exertion, with deficiency of rest, and, often, of nourishment.

To explain this more fully, we must recall the circumstances of the peninsular campaign of the army of the Potomac, from which most of our cases were brought; holding in view, at the same time, a very familiar physiological principle in regard to nutrition. This principle is, that while a muscle, or other organ, will grow stronger and larger with increased exercise, so long as sufficient intervals of *repose* are allowed, and sufficient *nourishment* and other healthy conditions of repair are obtained; the contrary effect, or exhaustion and atrophy, will follow an increase or excess of exertion, without sufficient repose, food, or other healthy conditions. Now, in the campaign of McClellan on the peninsula, the soldiers suffered from great and prolonged over-exertion with the most unfavourable conditions possible—privation of rest, deficient food, bad water, and malaria. The heart, being called upon to supply the demands of the over-tasked body, must, in such a case, become weakened, and that weakness is slow in being recovered from.

The only other supposable hypotheses in regard to the affection under consideration are:—

1. That it is merely a symptom of general *anaemia*.
2. That it is a *scorbutic* symptom; and
3. That it is a variety of *palpitation*, dependent on usual causes, such as excessive use of alcohol, tobacco, or coffee, or self-abuse.

As to anaemia, it has already been said, that in a number of cases, the heart-affection lasted long after the patients ceased to be anaemic, when they had enjoyed good appetite and digestion for two or three months, and had gained flesh and colour.

Scorbutus undoubtedly was a prominent element in the pathological state of very many of the patients from the campaign of the peninsula. Its recognition was of the highest importance; but, as to its relation to the “trotting heart” of our soldiers, setting aside the indefiniteness yet belonging to the use of the term “scurvy” as an entity, it may suffice to remark, that, as in the case of anaemia, the scorbutus was cured, but the heart-disorder remained long afterwards.

Nor can I think of assenting to the inclusion of our cases under the term of palpitation of the heart. The cardiac movement was different in character (as already described) from ordinary sympathetic or nervous palpitation; less heaving in impulse, more constant in character, and much more susceptible of increase by the slightest exertion. Of the ordinary causes of palpitation, some were present, of course, among the soldiers. Excessive use of whiskey, of tobacco, and, possibly, even of coffee, was not

absent altogether, even in the hospital; masturbation, in some cases, was not impossible. But, bearing all these in mind during the almost daily study of these cases for months, with all the opportunities for vigilance furnished by the régime of an army hospital, my conviction was very positive that none of these causes could have more than a partial or secondary influence in producing the condition of the heart described. I believe it to be most correctly designated as cardiac muscular exhaustion and atrophy.

In regard to the *prognosis* of this affection, my experience has been sufficiently extended only to justify the expectation that recovery would be slow, but might be hoped for under the most favourable circumstances, in young patients of previously good constitution. Several months of rest and treatment in the hospital failed to do more than *improve*, without nearly curing, a large proportion of our well marked cases.

The availability of these men for active service constitutes an important question. Judging from what I have seen, I think it can hardly be a mistaken opinion that they are entirely unfit for ordinary field service in the army. They would soon be broken down by the "double quick," or even by the knapsack and musket alone. It would, therefore, be not cruelty, but false economy, to compel them to undertake duty of which they are really incapable. No doubt many, perhaps most of them, would be quite able to do light service in various ways; but I am well satisfied that it would be cheaper and wiser, as well as more just, to discharge them, than to return them to regimental duty before the exhausted heart has had time for full recuperation.

Aug. 5th. Report of several Cases of Stone. Dr. DAVID GILBERT offered the following report:—

I last winter reported to the College six cases of successful lithotomy which were remarkable on account of the advanced age of the patients. None were under fifty years old, whilst one was seventy-four, another seventy-eight, and yet another over eighty-one. I desire now to present two other cases, in which the size of the stones was much larger than ordinary.

I was called to the first of these, Mr. Beesly, aged twenty-nine years, on the 7th of June last. The rational symptoms of stone were marked. The sound was introduced on the following day, and the presence of a large calculus discovered. Two days subsequently the lateral operation was performed. Both lobes of the prostate were incised, on account of the anticipated large size of the stone. The extraction was accomplished with difficulty; no forceps which we had, or could procure, being large enough securely to grasp the calculus. Its hardness, as well as the inadequate size of the crushing instruments, rendered it impossible to break the stone into fragments. It was finally removed by the largest forceps in our possession, with the aid of the lithotomy scoop in the hands of Dr. R. J. Levis, who was my assistant on the occasion. The patient has made a good recovery. There was little after suffering, even in the wound, when the urine was passed. The patient engaged in his ordinary vocation, that of a shoemaker, at the end of the seventh week after the operation. The stone measures $7\frac{1}{2}$ inches in its largest, and $6\frac{1}{2}$ in its smallest circumference, and weighs 6 oz. It belongs to the uric or lithic acid variety, judging from its external appearance.

The second case is that of Mr. Hellerman, aet. 49 years, also a shoemaker. He was brought to me from the country on the 30th of July ult.

His system being in a favourable condition, although his sufferings were great, the operation was performed on the 1st inst. The patient has been in a very favourable condition since the operation. He is now in the fifth day; free from suffering except that which is caused by the passage of the urine through the wound. His pulse is full, soft, and regular, and but 72 beats to the minute. Since the second day after the operation, half of the urine has passed through the urethra, which is very unusual. Every other symptom is favourable to a speedy recovery. This stone weighs two ounces, and from its appearance belongs to the oxalate of lime or mulberry variety.¹

In examining the reports of cases we find but few calculi removed in modern times that weigh more than one ounce. The older European authors mention cases in which the calculi weighed from ten up to fifty ounces, but in this country there are none reported even as heavy as ten ounces. It is to the credit of modern surgery that urinary concretions are usually detected early and operated for before they attain to so large a size. The escape of this largest from early detection may be accounted for from the fact that the patient had for many years been under the care of homeopathic practitioners, who treated him for "dyspepsia with sympathetic irritation of the urinary organs." When I informed him that there was stone, he was greatly surprised, and he stated that this was the first time that such opinion was given in his case.

My friend Dr. J. J. Reese, late Professor of Chemistry in Pennsylvania College, writes me as follows:—

"I have analyzed the two large calculi you left with me, and the following are the results:—

"The largest one is composed of a crust (less than a quarter of an inch in thickness) of *uric acid*, and the remainder of *oxalate of lime*. The other one consists of *oxalate of lime* (mulberry calculus)."

Oct. 7th. On the resemblance of "Spotted Fever" to certain European Epidemics.

Dr. HENRY HARTSHORNE called attention to the points of similarity existing between the present "spotted fever" and a disease occurring epidemically at several times and places in Europe; an account of which is given by Boudin in his "*Traité de Géographie et de Statistique Médicales et des Maladies Endémiques*." This, the "*ménингите cérébro-spinale épidémique*" of some French authors, was by the Germans called "*cerebral typhus*," and by the Italians "*tifo apoplettico tetanico*." While Paumier describes something very much like it at Paris in 1568, the first clearly recognized occurrence of it was at Geneva in 1805; after which it was traced in a number of different localities on the continent in 1806-7, 1811, 1813-14-15-16, and 1823. At Geneva "the characters described were: sudden attack in the night, vomiting of green matter, atrocious cephalalgia, spinal rigidity, difficulty of deglutition, convulsions, nocturnal exacerbations, petechiae, death occurring after from twelve hours to five days of illness."² At Grenoble, in 1814, one variety was observed with tetanus, and another without tetanus. In the department of Landes, 1837, there was also remarked, in certain cases, exaltation of the tegumentary sensibility. The disease attacked persons of all ages, and both sexes, although the smallest number of cases occurred in females. Much the greatest number of these epidemics broke out in garrisoned towns or among the regiments of the

¹ May 16. This case recovered.

² Boudin, op. citat., tome ii. p. 567.

army; sometimes among galley-slaves. A tendency to *localization*, in quarters, houses, or families, with an "irradiation" therefrom, was very marked. In regard to season, the largest proportion of cases occurred in February, January, and December; the smallest in August and September. Autopsy discovered, in many instances, no appreciable anatomical lesion; in others, serous inflammations, especially cerebro-spinal, proceeding in a few cases to the formation of pus. Boudin remarks upon the pathological analogy between this disease and puerperal fever. The mortality of the affection was always great. At Rochefort, 1834, of 222 ill, 174 died; in Naples, 1841, of 218, 102 died. The only treatment in which, after considerable experience, Boudin placed any confidence, was that in which opium was used remedially. "To oppose a medicinal to a morbid diathesis" was his principle. For this purpose he resorted, in the beginning, to a tolerably full dose of opium (50 centigrammes to 1 grammie), after which it was continued in fractional quantities, according to the case (5 to 10 centigrammes every half hour). An *opiate sleep* was often followed by convalescence.

Dr. H. Hartshorne wished to lay emphasis especially upon the general resemblance in symptomatology of these epidemics to our "spotted fever;" upon their general (though not universal) association with the circumstances of war, or, at least, of military régime; the preference evinced by Boudin and others for the designation "cerebral typhus" rather than "cerebro-spinal meningitis;" and, lastly, upon the strongly pronounced opinion of Boudin, based upon observation, in favour of the opiate treatment.

1864. Feb. 3d. *Ossification of Crystalline Lens.*—Dr. HUNT presented a specimen of this kind removed from a boy of sixteen, one of whose eyes had been disorganized from infancy, probably from an attack of purulent ophthalmia. Sympathetic disturbance of the sound eye had existed from the time of the original attack, manifesting itself in constant photophobia, both deep-seated and supra-orbital neuralgia, and conjunctivitis. There was no staphyloma.

Exacerbations of these symptoms were frequent, depending on the weather, and on the boy's general condition. His education had, of course, been materially interfered with, although his natural abilities were good. The diagnosis that the symptoms depended on the old diseased eye was confirmed by the results of the operation.

This consisted in removing the anterior half of the globe. The cornea and the remnants of the ciliary processes, with the peculiarly altered lens adhering to them, were removed. The eye collapsed, and recovery was rapid.

Vision of the sound eye at once improved, and in two months the patient was enabled to walk with head erect, without intolerance of light or pain, and with vision completely restored.

An artificial eye removed every trace of deformity.

Cerebro-Spinal Meningitis.—Dr. WALTER F. ATLEE communicated an account of ten cases of a disease before unseen by him, and believed by him to correspond to what is styled *cerebro-spinal meningitis*, which he has recently witnessed at St. Vincent's Home, an institution for young children under the care of the Sisters of Charity, situated at the corner of Eighteenth and Wood Streets.

The symptoms presented by these cases were, generally, as follows:—

They were suddenly seized with vomiting, the face was bluish, the breathing rapid, and the pulse irregular. The pupils were always enormously dilated. The position they maintained in bed was peculiar; the spinal column was bent far backwards, and the palms of the hands were pressed against the posterior part of the head, which was turned far back. The exaltation of sensibility of the skin was very great, so much so that the children could not bear to be touched; they would cry for drink, yet could not bear to be moved to have the cup placed to the mouth. All passed water freely, except in one case (Case VI., of the list given below), where none escaped externally for the first thirty-six hours. The bowels were confined in all, excepting in one case (Case IV.), where the feces passed in a convulsion, with which the disease began; and in one (Case V.), where, on the first day, there was purging of pure blood. Four of the cases had epileptiform convulsions (Cases II., III., IV., and VII.); in one (Case IV.), the disease thus commenced; two (Cases II. and VII.) died in convulsions; and the fourth (Case III.) recovered. In one case (Case VI.) after death the body was covered with spots resembling small bruses. In another case (Case VII.) there were spots on the lower limbs like flea-bites, on the second day, that disappeared on the third.

No *post-mortem* examination was made.

The treatment consisted in the application of irritants to the back, and in the administration of opium, one-twelfth of a grain of the extract being given in syrup every three hours. Brandy, wine-whey, and essence of beef were given freely.

The cases are as follows:—

CASE I. Female; a child 4 years old; taken sick December 30th; died February 3d, after gradually growing more and more thin and weak.

CASE II. Female; a child 4 years old; taken sick December 31st; died in a convulsion in less than 36 hours.

CASE III. A male child $2\frac{1}{2}$ years old, taken sick January 1st; recovered after a long convalescence, during which he had eight different attacks of convulsions.

CASE IV. A male child, 3 years old, taken sick January 3d; died January 5th, respiration becoming very rapid, and skin blue, though perspiration showed the lungs to be unembarrassed.

CASE V. A male child, 3 years old, taken sick January 4th; recovered, and rapidly, so as to leave the infirmary well on the 11th, or one week afterwards.

CASE VI. A male child, 2 years of age, taken sick January 10th; died on the 12th.

CASE VII. A male child, 2 years of age; taken sick January 10th; died on the 12th, in a convulsion.

CASE VIII. A female child, 4 years of age; taken sick January 10th; taken out of the Home, on the 14th, by the mother, who was sure, from the position maintained by the child—the head thrown far back, and the back bent—that some injury had been received by the child's spine.

CASE IX. A female child, four years of age; taken sick January 11th; recovered.

CASE X. Sister L—, aged 19 years; taken sick on the 13th January; recovered.

The sister's case is as follows:—

January 13th: no appetite. January 14th—10 o'clock A. M.: chilly,

face leaden, nausea, violent headache, pulse about 90, and feeble. 2 30' P. M.: had vomited, face somewhat flushed, pain in head more violent, pupils as large as if from action of atropia, pulse irregular. 6 o'clock P. M.: great pain in the head, and in the back. Ordered one-fourth grain of extract of opium every three hours, two grains of chlorate of potassa every hour, chloroform to the back of the neck, eroton oil to the spine, a hot salt bag to the loins, beef-essence, wine-whey, and punch. January 15th—9 A. M.: pain most violent in the back of the head, when the hands were pressed as in the children. 12½ P. M.: pupil more contracted. 6 P. M.: pulse still irregular and feeble. January 16th—9 A. M.: pulse regular and 88, pupil almost natural, and headache less; had slept, for the first time, from 12 to 1, and from 4 to 5 o'clock. January 17th: had slept four hours; the opium was gradually left off from to-day. January 19th: bowels opened for the first time, by castor oil, twice repeated.

The institution contains about 80 children, boys and girls, in equal numbers, of whom nine were attacked, five boys and four girls; and six sisters, of whom one was attacked. Of the nine children who were sick, five died, three recovered, and one was removed, in which case the result is unknown. The sister recovered.

It is worthy of mention that the disease broke out two days after clothing had been placed upon the children that came from Manayunk. It is impossible to find, however, that this clothing had been in contact with any persons affected with the so-called spotted fever, which is said to prevail in that part of the country. The sister who was attacked was not the one who was attached to the infirmary, or one more in contact with the sick than another.

DR. W. JEWELL presented his Annual Report on Meteorology and Epidemics, as follows:—

The meteorology of the year will be found in the table 1, politely furnished by Prof. Kirkpatrick of the Philadelphia High School. Here we have represented the mean temperature of the year 54.13° , which is 1.55° warmer than in 1862. The highest point of heat attained was 95° on August 10th, within a half degree of the highest point in 1862, on the 7th of July. The mean daily range was 5.39° . The lowest degree was 5° , on Feb. 5th, three degrees lower than Dec. 21, 1862. The coldest day was the 4th of February.

The mean daily pressure of the atmosphere was 29.864 inches of the barometer, and the mean amount of humidity in the air was 67.2 per cent. of saturation.

The rain and snow-fall amounted to 49.642 inches, which exceeded the rain for 1862 by 3.986 inches, and was greater in amount by 4.314 inches than the average for the last 12 years, while the number of days on which rain fell, viz., 143, was 9 more than in '62 and 15 more than the average for twelve years.

The amount of rain that fell during the spring and summer was 28.542 inches, being 8.210 more than in 1862. While the number of days it rained amounted to 82, which exceeded the number in 1862 by 20 days. The seasons therefore have been uncommonly wet, and whatever influence they may have exerted upon the character and fatality of our diseases, the heavy rains from time to time have been useful in deluging our streets and gutters, carrying off an immense quantity of putrid offal from our neglected thoroughfares.

A General Abstract of the Meteorological Observations made at Philadelphia during the year 1863.—By Prof. JAMES A. KIRKPATRICK.
Latitude 39° 57' N. Longitude 75° 10' W. from Greenwich. Height of Barometer fount, 60 feet above mean tide in the Delaware River.

BIRTHS.—During the year there were 15,293 births recorded in the registration office. This is an increase of 552, or 3 74 per cent. above those for 1862. Compared with the number of deaths, it shows an increase of the population of ten in every hundred; thus, the deaths amounted to 14,220, while the births were 15,293—an increase of births over the deaths of 1,073, equal to 7.54 per cent.

The accompanying table gives the total number of births during the year, with the sexes, and shows the births credited to the different months with the still-born and the twins, also the births of coloured children.

1863.		BIRTHS.		BLACK.		STILL BORN.		
MONTHS.	TOTAL.	Male.	Female.	Male.	Female.	Male.	Female.	Twins.
January	1,363	731	632	11	13	36	26	10
February	1,296	691	605	14	7	31	19	16
March	1,405	723	682	12	11	21	22	18
April	1,244	651	593	15	8	55	26	14
May	1,139	582	557	7	12	27	28	9
June	1,105	577	528	17	8	31	29	11
July	1,189	636	553	7	12	28	38	12
August	1,306	647	659	8	21	30	14	20
September	1,323	725	598	12	11	45	25	8
October	1,259	683	576	20	16	37	33	6
November	1,324	706	618	15	11	39	23	14
December	1,340	690	650	13	11	52	28	10
Total	15,293	8,042	7,251	151	141	432	311	148

The month of March yielded the greatest number of births, 1,405, and June the least, 1,105.

The male births amounted to 8,042; the female births to 7,251. An excess of males of 791, or 10 per cent.

The still births were 743: of which 432 were males; while only 311 were females, nearly one-third less. This disproportion of the sexes in still births is not without interest. The disproportion is 4.50 per cent. greater than in 1862.

The monthly record of still-born children is not in the same ratio with the births. It will be observed that the highest number of still births was 81, in April, which furnished only 1,244 births; while the lowest number in any month was in March, viz., 43, and this month gave 1,405 births.

By computing the number of births for each month during the past three years of the operation of the registration law, and arranging them as we have done on a former occasion, placing those months affording the highest number in the scale of births in their numerical order, and in an opposite column the corresponding months of conception, and we arrive at precisely similar results as formerly, and as shown by Dr. Emerson and M. Villerne of Paris, viz., that those months furnishing the lowest number of births correspond with the months of conception, July, August, and September, during the extreme heat of summer, as the following table will show:—

Months.		Whole Number of Births.		Corresponding Months of Conception.
1. March	.	4298	.	June
2. January	.	4261	.	April
3. December	.	4046	.	March
4. November	.	4008	.	February
5. August	.	4001	.	November
6. February	.	3998	.	May
7. September	.	3990	.	December
8. October	.	3943	.	January
9. July	.	3865	.	October
10. April	.	3695	.	July
11. June	.	3602	.	September
12. May	.	3598	.	August

According to these results fecundity is not only affected by the order of the seasons, as the extreme heat of the summer solstice, but also by endemic influences. It is well understood that during the three months, July, August, and September, our population is diminished directly by an increase of deaths, and as shown above, it may likewise be lessened through the same influence by diminishing fecundity.

This is a subject worthy of more enlarged investigation than could be offered in this report.

The births returned of coloured children amounted to 292. This is an increase of 16.33 per cent. over those registered for 1862, but a decrease below those for 1861 of 5.50 per cent.

The deaths of the coloured population were 767, showing a heavy percentage over the births, equal to 162 per cent. This result indicates a rapid decline, provided the returns of births are made with any degree of accuracy.

Twin births registered, amounted to 148. The highest number born in any one month was 20, in August; the lowest, in October, six. No triplets were registered during the year.

The first ward with a population of 30,886 furnishes the greatest number of births, viz., 1,146—equal to 1 in every 27 of the population. The lowest number of births are set down to the fifth ward, viz., 371. This ward has a population of 24,792, and gives only 1 birth in every 67.

The 19th ward has a population of 38,828 souls; it is not, however, as productive as some other wards, producing only 1,122 births, or 1 in 35 of its population.

It will be observed that in all the wards except the second, third, fourth, fifth, seventh, eighth, ninth, and twenty-first, the births exceeded the deaths; even in the seventeenth and nineteenth wards, swarming with populations, not the most favourable for health, owing to crowded and ill-ventilated dwellings, imperfect drainage, unpaved streets, and numerous sources of foul and unhealthy emanations—the births exceeded the deaths.

The 20th, 16th, 12th, 22d, and 24th wards presented the greatest contrast between the births and deaths in favour of the forces of organic life and reproduction, when compared with their mortality. These statistics are an index of the prosperity or numerical growth of these several districts.

The daily average of births was 42. The 1st and 4th quarter of the year contributed the highest number of births, and the largest percentage; the 2d quarter the lowest, as follows:—

First Quarter, ending March 31	4,064	= 26.57 per cent.
Second Quarter, ending June 30	3,488	= 22.81 "
Third Quarter, ending September 30	3,818	= 24.96 "
Fourth Quarter, ending December 31	3,923	= 25.66 "
Total	15,203	= 100.00 "

MARRIAGES.—The accompanying table gives the number of marriages recorded during the year, with the ages of the parties married, and the percentage of men and women married, according to the different periods of life.

AGES OF THE MEN.	AGES OF THE WOMEN.										Total of the Men.	Percentage of the Men.
	Under 20.	20 to 25.	25 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	Age not given.		
Under 20.	18	8									26	.51
20 to 25.	654	1031	128	26							8	1847 36.50
25 to 30.	244	925	388	87	6						5	1655 30.71
30 to 40.	79	311	377	250	25	2					6	1056 20.86
40 to 50.	9	39	85	140	68	6					3	350 6.91
50 to 60.	2	4	7	29	38	10	2				92	1.81
60 to 70.		1	1	6	5	11	1				25	.49
70 to 80.			1		1	3	1				6	.11
80 to 90.						1	1				2	.39
Age not given.	4	6									1105	415
Total of the Women.	1010	2325	987	544	143	33	5				427	4547
Percentage of the Women.	29.01	46.06	19.55	10.77	2.83	.65	.09					

There were 5474 marriages recorded during the year; an increase of \$12, equal to 17.41 per cent. over those returned for 1862. This increase is an evidence of a far more strict compliance with the law of registration on the part of clergymen, rather than from an actual increase of the number of marriages solemnized. There is, however, a considerable defect in the returns made as to the relative ages of the parties wedded. The table shows that the ages of 415 of the men and 427 of the women married, equal to 9 per cent., have been omitted. This imperfection, owing in some instances to the carelessness of the officiating clergyman, and in others to a peculiar hesitancy of the persons about to be united, should not prevail in a document fraught with so great importance to the parties themselves and their heirs, in a legal point of view.

Of the parties married 1010, or 20 per cent. of the brides were under twenty years of age, while only 26, or 0.51 per cent. of the grooms were in their minority.

The popular age for marriage appears to have been between twenty and twenty-five. Within these ages, there were 2325, or 46 per cent. of all the women, and 1847, or 36.50 per cent. of all the men married during the year. Within the period of twenty-five years of age the brides are more numerous than the grooms. Beyond this age the brides decline, while the grooms increase in numbers.

Between the ages of twenty-five and thirty, there were 1655, or 31 per cent. of men, and 987, or 19.55 per cent. of women married.

There are only twenty-five marriages recorded between sixty and seventy, six between seventy and eighty, and two between eighty and ninety years of age.

The annexed table gives the nativity of the parties married:—

NATIVITIES.	BIRTH-PLACE OF BRIDES.			Total of Grooms.	Percentage of Grooms.
	United States.	Foreign.	Not given.		
BIRTH-PLACE OF GROOMS.	United States.	2753	261	25	3039
	Foreign.	495	1721	10	2226
	Not given.	22	12	175	209
Total of Brides.	3270	1994	210	5447	
Percentage of Brides.	62.12	37.88			100.00

Of the number of men married, 3039, or 58 per cent. were natives of the United States; of this number, 2753 married American women; 261 married foreigners, and 25 married those whose birth-places are not designated.

The number of men of foreign birth amounted to 2226, or 42 per cent., of whom 495 married American women, and 1721 married women of foreign birth. There were only ten instances of this class in which the nativity of the women was omitted.

Of the women married, 3270, or 62 per cent. were born in the United States. Of these, 2753 married American born men, 495 foreigners, and 22 were not designated.

There were 1994 women of foreign birth, equal to 38 per cent. married. 261 married men American born, and 1721 married men of foreign birth. Twelve were not designated.

In 2753 instances, equivalent to 50 per cent., both parties were American born, and 1721, equal to 31 per cent., they were of foreign birth.

Deaths.—The following table furnishes a summary of the interments in our city for the year 1863, as registered at the health office:—

White		15,021
Coloured		767
Total		15,788
Males		8636
Females		7152
Total		15,788
Male adults		4143
Female adults		3195
Total adults		7,388
Male children		4494
Female children		3956
Total children		8,450
Total		15,788
From registered diseases in city		12,944
" Stillborn		743
" Old age		234
" Unknown causes		112
" External and accidental causes		619
" Country		825
" Gunshot wounds		310
Total from all causes		15,788

By reference to the above summary, and to the tables which have been prepared to illustrate the prominent points of interest in our city mortality, in their several aspects, it will be seen that 15,788 deaths from all causes have been registered during the year 1863.

This is the highest death rate ever returned for a single year in our city, and presents an increase over those returned for 1862 of six hundred and ninety-one, equal to 4.57 per cent.

The whole number of deaths recorded include stillborn, old age, unknown, external and accidental causes, gunshot wounds, and deaths from the country. To arrive, however, at a more correct estimate of the true health of our city, it is proper to exclude the deaths recorded from stillborn, and those from the country, amounting to 1568, and confine the calculation to those from registered deaths in the city alone. These amount to 14,220.

If we estimate the increase of our population at three per cent. per annum, since the census of 1860, which gave us at that time 565,529, we have now a resident population, in round numbers, of 618,000 souls; this is by no means an exaggerated calculation, and is perhaps below the number for which we ought to receive credit.

From this standpoint, we have 23 deaths in every thousand of the living, which is equal to one in every 43.45 of the population.

As in 1862, so in '63, there has been an unusual excess of deaths in the male sex, amounting to 20 per cent. The deaths of males were 8636; females, 7152; excess, 1484. This inequality will be found in the numerous deaths among returned soldiers from the armies of the Union, amounting to 893.

The mortality among children was 8450, or only 1112 above those of adults, equal to 15 per cent. This inequality, like that of last year, is far below the ordinary standard, and is owing to the increased proportion of deaths of adults, occasioned by the influx of sick soldiers into our city.

The highest mortality in any one epoch of life was 3995, those under one year. This includes the stillborn, and is equal to 25 per cent. of the registered deaths.

The most fatal period of childhood in cities is between birth and the fifth year. Beyond this age, there is a rapid falling off in deaths until the fifteenth year, when the mortality begins to increase again, as the children approach manhood.

Out of 7981 deaths of children during the year under fifteen years of age, 3995 were in the first year; 1483 between one and two years; 1480 between two and five years; 719 between five and ten years, and 304 between ten and fifteen years. The next five years the death rate rose to 469, while in the following quinquennial period, from twenty to thirty, embracing early manhood, the deaths were nearly quadrupled, amounting to 1743.

According to these figures, it will be seen that 39 per cent. of our annual mortality was in children under five years (exclusive of stillborn). This death rate corresponds with that of the city of London (proper), according to Dr. Lethaby's last report for 1862 and '63. In this report he remarks, "the proportion in the rest of London is about 44 per cent., and in England it is nearly 40." Compared with all England, therefore, and with other large cities in this country, this mortality is not excessive.

But when compared with the number of births during the year, the mortality is frightful, equal to about one death for every two children born!

This enormous excess of infant mortality should excite far greater attention from the philanthropist than is now given it. We offer no apology for the sanitary defects of our city, they are numerous, and add their full share as one of the causes for this unnecessary sacrifice of infant life; but there is another—and it is humiliating as well as discreditable to the mothers of our city to admit the fact—that the want of proper care, either through pride, ignorance, or neglect in the management of infants, is the principal agent of our infant mortality.

The several government hospitals located in our city, together with the exposures attendant on camp life and the chances of the battle-field, have contributed to swell our mortality, and have added to the list 893 deaths. Of these, 308 were from gunshot wounds; 123 from typhoid fever; 100 from diarrhoea; 57 from consumption of the lungs; 27 from smallpox; 29 from pyemia; and the remainder from chronic, scrofulous, and incidental diseases. At this point, we may, in passing, add our testimony to the great value of military hygiene. Though the statistics of the U. S. army hospitals in this city are on a limited scale, still they confirm the views of experienced military surgeons abroad, and the results of investigations founded upon recent events in our own military history, that a greater number of soldiers fall victims to disease and death in consequence of unfavourable hygienic circumstances surrounding them, than from wounds inflicted in battle.

The principal number of deaths in these U. S. hospitals located in Philadelphia were among men brought from the battle-field, or from diseases contracted in camp and in barracks, and should not be charged to our city mortality. Again, it will be seen that 489, or 53 per cent. of the deaths were from preventable causes, while only 33 per cent. were from gunshot wounds; 97 were the result of accidents and constitutional causes not peculiar to a soldier's life.

The mortality from zymotic or epidemic and endemic or contagious diseases registers 3392. Of this number, 189 were brought from beyond the

limits for interment, and do not belong to our city mortality; hence, the deaths in the city from preventable diseases have been only 3203.

Notwithstanding the general increase of deaths for the year, it will be gratifying to allude to the decline of those from zymotics, which may be held up as the index to the good or bad sanitary condition of a neighbourhood. As will be seen, they have fallen below those for 1862¹ to the number of 148, equal to $4\frac{1}{2}$ per cent.

With every allowance for this decline, the death rate of preventable diseases continues far beyond the standard that might be attained, if a proper attention was given by the municipal authorities to sanitary improvements. While we are unwilling to hold out the idea that our city mortality will ever compare with that which exists in rural districts, because, as has been wisely said, "a penalty must always be paid for the privilege of civilization, and for the right of partaking of the greater luxuries of the metropolis;" still, there are sanitary reforms both necessary and desirable, apart from the unwholesome influences connected with trade and manufactures, which effected, would contribute materially to lessen the waste of human life, and to improve the public health.

The condition of the streets and sewers of our city under the immediate control of the authorities, constitute the most prevalent sanitary evils, while the dwellings of those who are compelled by poverty to live in crowded, ill-ventilated and badly lighted apartments, in the purlieus of the city and in narrow confined and filthy streets and courts, are subject to unhealthful influences that invite disease, and when attacked, their already enfeebled vital powers are incapable of resisting its rapid progress, and thus our mortality is augmented to a fearful extent.

It is in the power of the corporate authorities to correct the former evils, by the direct and frequent application of the broom and water, aided by the exercise of sanitary science. The latter, the homes of the poor, over which they have not the like power, will, when the example is offered their inmates, through clean streets and unobstructed sewers, be encouraged to improve and keep clean their miserable places of abode, and thereby check the accumulation of causes that have a depressing influence, and foster and develop endemic diseases of a low or malignant type.

The following table will furnish the diseases considered preventable, from which deaths have occurred during the year. It also presents the number and character of the deaths which have been charged to the different wards. These are the diseases supposed to have their origin in specific and local causes.

¹ 3351, deducting those from the country.

Zymotic, Epidemic, and Contagious Diseases for 1863.—Division I. Showing Sex and Age.

DISEASES.	SEX.	AGES.										MORTALS.										
		MALES.	FEMALES.	BOYS.	GRILS.	YEAR.	1 TO 5.	6 TO 10.	11 TO 15.	16 TO 20.	21 TO 30.		30 TO 40.	40 TO 50.	50 TO 60.	60 TO 70.	70 TO 80.	80 TO 90.	90 TO 100.	100 TO 110.	110 TO 120.	
Cholera.		8	456	474	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2
" infantum		930	456	474	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	330
" morbus		28	18	10	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
Diarrhea.		315	207	108	63	65	35	11	3	1	1	1	1	1	1	1	1	1	1	1	1	187
Diphtheria.		218	216	208	210	38	78	191	66	19	6	2	3	1	1	1	1	1	1	1	1	185
Dysentery.		176	932	841	51	42	26	1	4	1	1	1	1	1	1	1	1	1	1	1	1	418
Erysipelas.		74	39	35	17	22	26	1	4	1	1	1	1	1	1	1	1	1	1	1	1	83
Fever.		17	8	9	7	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	39
" congestive.		43	20	23	12	13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	122
" continued.		7	5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25
" eruptive.		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
" intermittent.		7	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
" malignant.		12	6	7	5	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11
" potental.		4	1	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
" recurrent, bilious.		28	14	14	6	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
" scarlet.		275	142	133	111	130	21	39	129	72	9	1	1	1	1	1	1	1	1	1	1	271
" spotted.		49	33	16	30	30	14	4	2	10	12	6	1	1	1	1	1	1	1	1	1	41
" typhoid, low.		340	146	82	60	1	7	27	33	27	50	117	87	45	30	19	11	3	1	1	1	312
" typhus.		487	340	69	62	43	33	4	4	18	21	13	16	19	6	16	10	4	1	1	1	76
" yellow.		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hooping cough.		78	24	54	21	54	52	20	22	3	7	1	1	1	1	1	1	1	1	1	1	76
Measles.		82	40	42	38	41	13	30	32	4	25	6	5	5	13	7	1	1	1	1	1	3
Smallpox.		171	95	76	65	65	33	24	34	9	15	1	1	1	4	2	1	1	1	1	1	50
Syphilis.		28	15	13	12	9	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	21
Thrush or aphtha.		6	4	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Total.	.	3392	1856	1336	1269	1257	913	560	545	293	102	113	298	186	141	88	80	45	27	1	866	2529

Deaths from Zymotic Diseases in each Quarter of the Year 1863.

1st quarter, January, February, March.	566	349	217	166	61	51	120	58	20	25	91	66	32	22	10	11	9	4	4	231	335
2d quarter, April, May, June.	596	316	220	233	95	88	111	71	30	25	76	52	28	21	12	13	9	3	4	112	151
3d quarter, July, August, September.	1618	834	784	664	683	676	166	76	60	22	60	49	36	21	14	14	9	3	4	266	1352
4th quarter, October, November, December.	613	357	255	216	160	50	54	118	88	25	38	67	53	48	32	17	6	4	4	227	385
Total.	3392	1856	1236	1290	1257	913	560	545	293	102	113	298	186	141	88	80	45	27	1	866	2529

Zymotic, Epidemic, and Contagious Diseases for 1863.—Continued. Division 2. Showing Location, Colour, Nativity, and Wards.

DISEASES.	NATIVITY.	WARDS.																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Cholera	Unknown	1	23	46	47	46	31	1	72	25	25	21	26	21	1	1	1	1	1	1	1	1	1	1	1	1
“ infantum	“	5	2	2	16	12	10	19	30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ morbus	“	29	18	190	66	50	59	21	15	8	14	8	21	8	14	9	16	5	13	13	13	13	13	13	13	13
Diarrhea	“	1	10	117	9	8	122	12	21	11	9	5	7	5	9	5	3	2	1	1	1	1	1	1	1	1
Diphtheria	“	7	5	9	122	12	21	11	9	4	4	3	4	2	1	1	1	1	1	1	1	1	1	1	1	1
Dysentery	“	3	2	4	5	4	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Erysipelas	“	1	1	122	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fever	“	44	34	8	1	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ congestive	“	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ continued	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ eruptive	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ intermittent	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ malignant	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ pectorial	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ remittent, bilious	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ scarlet	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ spotted	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ typhoid, fever	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ typhus	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
“ yellow	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bronzing cough	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Measles	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Syphilis	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turbo or aphtha	“	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	•	84	112	189	2,941	329	172	231	664	107	130	88	71	181	90	76	110	72	70	76	97	235	102	127	39	

Deaths from Zymotic Diseases in each Quarter of the Year 1863.

1st quarter, January, February, March	13	11	48	438	74	54	19	29	11	15	9	12	33	13	17	20	9	18	16	14	30	12	18	15	42	15
2d quarter, April, May, June	15	14	30	513	61	22	37	22	20	25	13	11	28	14	8	16	20	13	5	17	62	23	21	34	39	3
3d quarter, July, August, September	27	26	69	67	1172	56	139	93	30	69	52	33	99	44	37	63	26	29	41	47	101	51	59	39	101	84
4th quarter, October, November, December	27	18	41	46	163	101	40	36	20	16	19	11	11	7	13	10	13	26	47	19	77	19	14	46	11	1
Total	•	84	112	189	2,891	329	172	231	664	107	130	88	71	181	90	76	110	72	70	76	97	235	102	127	39	

The figures in this table show that the deaths from zymotic diseases are to the total of deaths for the year as 20 per ct., or one in every five.

A marked disproportion will be noticed in the deaths of the sexes. The males are 1856, while the females are only 1536; a difference of 320, or an increase of 20 per ct. in favour of males. This may be accounted for by the large number of deaths among soldiers who have been brought home sick, or for interment.

The deaths in the four quarters are presented in the annexed table with the above.

The third quarter of the year, July, August, and September, embraces 1618 deaths, while the three remaining quarters amount only to 1774. This difference is owing to the mortality from certain diseases peculiar to the summer months, as cholera infantum, dysentery and diarrhœa.

The mortality among children under five years of age, from the diseases in the class zymotic, has been almost incredible, amounting to 63 per ct., and if we include those between five and ten years, it will swell the number to 70 per ct.

The highest number of deaths from any one disease in this catalogue, was 930, cholera infantum. This destructive disease of infants shows an increase of 301 deaths over those of 1862, or 48 per ct., and was confined principally to the three summer months, July, August, and September.

This infantile disease is peculiar to large cities, and is most prevalent and fatal in those localities where exists the greatest amount of filth, squalor, over-crowding, defective ventilation, with other unwholesome influences.

A glance at the figures on the line opposite cholera infantum, under the different wards, will strikingly exemplify this remark.

The first seven wards contributed 343 deaths, and those included from the 15th to the 20th wards gave 246, in all, 589, or 65 per ct., while the remainder 341 were scattered through the remaining twelve wards, including those from the Almshouse.

These thirteen wards are, with scarcely an exception, the most unsanitary of all others. They contain a larger and more densely crowded population. They have a greater number of small streets, and abound in courts and alleys. A stroll for an hour on a warm summer afternoon through several of these neighbourhoods, reeking with filth and mud, sending forth an indescribable odour, and then following up the visit by entering a few of the cellars and yards of the pent up hovels, where there exist a systematic neglect of cleanliness, and an atmosphere of decomposition, and we are persuaded the visitor will return home fully convinced that we have "neither extenuated or set down aught in malice," concerning these districts of our city.

Diphtheria.—The deaths from this disease amounted to 434 against 325, during the previous year, an increase of 33 per ct. This disease appears to have been steadily on the increase, while its prevalence has not been confined to any special locality. In point of fact, those wards called rural and those classed as healthy, and enjoying the advantages of house accommodation, free circulation of air, and their residents accustomed to the comforts of an improved social condition, all of which are essential to health, have suffered in some instances beyond those where the standard of social refinement is very limited, where there is over-crowding, neglect of cleanliness, squalid wretchedness, ill-ventilated dwellings, and an atmosphere at all times loaded

with unwholesome and deadly gases. For instance, the 4th ward gave only 8 deaths, while the 8th ward furnished 21 deaths. The 14th ward gave 16, while the 17th gave only 12. The 21st and 22d wards contributed 33 deaths, while the 2d and 3d gave 36, only a fraction more. These statistics conform to the opinion elsewhere expressed and cited in a former report, that diphtheria obeys no climatic laws, and is independent of all atmospheric conditions. We are quite certain that neither the heat of summer nor the cold of winter has exerted any influence in abating its destructive attacks.

Typhoid fever caused 487 deaths. Of this number 74 were brought from beyond the city for interment, and if we deduct the 123 deaths that are charged to the U. S. soldiers, it will then give us only 364 deaths as properly belonging to our city mortality. These figures, therefore, mark a slight decline from those of 1862, making a similar deduction of the deaths of soldiers for that year.

Diarrhœa.—Three hundred and fifteen deaths were caused by diarrhœa. Of this number, 100 are charged to the soldiers. By deducting these, as many of them died abroad and were brought here for interment, while others contracted their disease in camps, and were ordered to the U. S. hospitals located here, they do not properly belong to our city mortality, and should be deducted. By this arrangement, we reduce the deaths from diarrhœa to 215, a fraction less than those for the previous year.

Hooping-cough fell off 62 per ct., that is, from 208 in 1862, to 78 in '63.

Measles 24 per ct.

Smallpox 35 per ct., or from 264 to 171. Here again we desire to direct attention to the great number of deaths among children from small-pox compared with those in adults, as a proof of the defective character of the existing ordinance for public vaccination, and the necessity for a compulsory law in order to secure our city and even our State from the frequent ravages of this loathsome disease.

The month of February in this year was ushered in by the appearance of an unusual disease, of an eruptive form; its type asthenic; in many cases defying all treatment; running its course rapidly to a fatal termination, within from a few hours to two and five days, and if we can form any correct idea from the deaths reported, confining itself to certain localities in a densely populated district of the city, and to several built up portions of the rural wards.

In the absence of all correct diagnosis and the want of a proper nomenclature, it is somewhat difficult to secure the true number of deaths from this strange disease. We are very sure that the generic term "spotted," as given in the record, does not designate all of them. A variety of terms have been assumed, in the certificates of death, according to the views entertained of its diagnostic relations, and the observations and experience of those several practitioners who have been somewhat familiar with its advent and stay among us.

By some, it has been called *spotted*, and by others *malignant, petechial, congestive*, and *typhus* fevers. One practitioner certified to all his cases of death, under the very general term *fever*, for the want of a more distinct name. Nor is it less certain that many of the fatal cases were treated as

congestion, as well as inflammation of the meninges of the brain, and recorded *cerebro-spinal meningitis*.

Of the correctness of a single observation, however, as already intimated, and drawn from a careful analysis of the death register, and from reliable information otherwise secured, we are certain, viz., that this unusual visitor, whatever be its etiology, pathology, or distinguishing title, has confined its ravages chiefly to the northeastern section of the city, embracing the 16th, 17th, 18th, and 19th wards, having a front either directly or indirectly through the Cohocksink Creek, on the Delaware River. The built up portion of the 23d ward, bounded on the south, east, and west, by the Frankford Creek; together with that densely inhabited section of the 21st ward, on its western slope, lying along the margin of the Schuylkill River.

Out of the 256 deaths recorded from those fevers above named, 155, or 61 per cent., are credited to the localities we have designated as having suffered peculiarly from this uncommon and alarming disease. We think, therefore, there is legitimate ground for venturing the opinion that not less than 150 deaths have occurred during the year from "spotted fever," or *cerebro-spinal meningitis*.

Almost simultaneous with the advent of spotted fever in our city, an epidemic catarrh or influenza made its appearance and spread itself very generally throughout the community. This disease was not confined to any particular period of life, nor to any special locality. In its duration in those cases that were uncomplicated and occurring in healthy subjects, it seldom was prolonged over a week, was far more severe on the nervous system than the ordinary catarrhal affections, but by no means fatal in character.

In children especially, this disease was accompanied with an eruption in many cases that resembled measles, and in those instances in which the catarrhal fever was predominant, this eruption was not readily distinguished from that exanthem. This efflorescence would last for a day or two, and gradually fade. In several families attended by the writer, no other symptom invited attention either from the parent or physician. Urticaria also, or at least an eruption perfect in its resemblance, was occasionally witnessed as a concomitant of this epidemic.

For a very full and interesting account of this disease, we would refer the College to a paper by Dr. Levick, one of its fellows, in the Jan. No. of the *Am. Journ. of Med. Sciences*.

How far there is a parallelism between this epidemic and the malignant form of fevers which has prevailed, further investigations may determine. Surely, the testimony brought forward by Dr. Levick, describing the complications of former epidemic influenzas as they have occurred at home and abroad, goes far towards establishing a close analogy between the two diseases which have been prominently associated, and travelling side by side in our city during the year.

In the reports for 1861 and '62 to the College, there are tables in which are recorded the deaths in the different wards of the city from zymotic or epidemic diseases. Below, will be found a continuation of these tables, in which will be seen the wards where the deaths have been most prevalent for three consecutive years.

WARDS.	Population last census.	Deaths from Zymotic Diseases.			Total for three years
		1861.	1862.	1863.	
First	30,886	247	238	231	716
Second	29,123	237	216	164	617
Third	19,929	99	112	107	218
Fourth	23,461	171	125	130	426
Fifth	24,792	120	92	88	300
Sixth	14,882	58	68	71	197
Seventh	31,267	184	219	151	584
Eighth	27,770	71	93	90	254
Ninth	17,196	66	61	76	203
Tenth	21,849	101	132	110	243
Eleventh	16,681	151	86	72	309
Twelfth	16,681	125	107	70	302
Thirteenth	20,045	109	81	76	266
Fourteenth	24,258	110	100	97	307
Fifteenth	32,091	203	181	235	619
Sixteenth	20,067	183	122	102	407
Seventeenth	23,264	337	141	127	605
Eighteenth	20,441	233	125	99	457
Nineteenth	38,828	347	271	232	850
Twenty-first	29,963	270	192	169	631
Twenty-second	17,159	108	72	187	367
Twenty-third	17,173	58	71	98	227
Twenty-fourth	23,985	114	85	83	282
Twenty-fifth	23,738	114	49	228	382
Unknown . . . .	.....	...	221	71	292
Almshouse . . . .	.....	...	25	9	34
From the country	.....	...	...	...	...
Total population	565,529	.....	.....	.....	.....
Total deaths in each year		4,064	4,506	.....	3,392
Total for three years' epidemics				10,960	

According to the above figures, there has been an annual decline of deaths from those diseases usually called preventable. For instance, the deaths in 1863 were 16.50 per cent. less than in 1861. This gives a favourable indication as to the sanitary condition of the city.

The 1st, 2d, 4th, 7th, 15th, 17th, 19th and 20th wards, show a very heavy mortality from epidemic diseases. During the three years they have each been charged with over five hundred deaths, and the 19th, which has a population of about 38,828, contributed 850 deaths, or 1 in every 45. The 17th, with a population of 23,264, gave 1 death in every 38. The 1st, with a population of 30,886, gave 1 in 43.

These eight wards seem to maintain their reputation as the most unhealthy in the city.

MORTALITY IN WARDS.—The wards that have furnished the greatest number of deaths according to their population are the following in the numerical order which we have placed them, viz., the 1st, 24th, 15th, 4th, 2d, 7th, 3d, 20th, 19th, 21st, and 17th.

The 23d, 8th, 12th, and 13th wards gave the smallest number of deaths according to their population.

In all the wards of the city the populations have increased. Some allowance therefore must be made for the above calculations.

DEATHS FROM SPORADIC CAUSES.—In the general table of interments in this city for the year 1863, accompanying this report, it will be seen that the deaths from all causes, except those from zymotic diseases which we have already enumerated, numbering 3,392, have amounted to 10,828. Of these deaths,

CONSUMPTION OF THE LUNGS contributed the largest number, amounting to 1,955, nearly 14 per cent. of the total of deaths, and the highest mortality from this disease ever recorded for Philadelphia, being an increase of six over those for 1862.

The number of deaths in each month were as follows:—

January	164	July	171
February	164	August	155
March	160	September	156
April	209	October	150
May	146	November	162
June	121	December	197

The highest number in any one month was 209, in April. The lowest in June, 121.

The deaths among males exceeded those of females by 23. The two decennial periods between 20 and 40 contributed 974 deaths, equal to 50 per cent. .

The deaths among people of colour amounted to 161, or 8 per cent. The mortality from this disease is on the increase with the coloured population.

Thirty-five per cent. of the deaths recorded are charged to our foreign population, fifty-seven per cent. to those of American birth, seven per cent. not designated.

The average monthly mortality was 163, and for every day there were 5 deaths.

STILL-BORN.—From this cause assigned for death there are 743 returns. This is equal to about five per cent. of all the deaths. An improvement in this classification is much needed. How many of the "still-borns" were the result of design, malpractice, ignorance, neglect, carelessness, or scientific destruction of life at the time of, or during the process of labour, is a question of importance for solution. Were all the causes we have suggested for the deaths of new-born infants, to be assigned, when they are rightfully entitled to the credit of the death, the name "still-born" would hardly find a place in the catalogue. In a sanitary estimate they should always be deducted.

INFLAMMATION OF THE LUNGS.—Deaths from this disease occurred in 743 instances. This is a winter disease, and while it is not confined to children, but may attack at all ages, nevertheless 276 of the deaths, equal to thirty-seven per cent., are placed to the account of children under five years of age. Many of these deaths in young children are not only the result of neglected bronchial catarrhs, but complications with measles, hooping-cough, and scarlatina. Strictly classified, they should be assigned to these several headings.

DEBILITY.—Under this very common title there are set down 926 deaths. Of these, 356 were under one year of age. It is very doubtful whether the deaths beyond the first year of life belong properly to debility alone. By a more careful diagnosis their true cause, a consequence of disease, would have been detected, and another name given to the remaining 570 deaths.

MARASmus gives 606 deaths. Of this number, 551 were among minors,

and of these, 365 were under one year of age. This record is less than that for 1862, by 37 deaths.

CROUP, a disease peculiar to childhood, furnishes 444 deaths. Of these 335 took place between the first and fifth year, and this is the period when children are most susceptible to an attack.

The excess of male deaths in the record, 47 over those in the female, equal to $23\frac{1}{2}$ per cent., goes to confirm the opinion so frequently referred to, that boys are more subject to croup than girls. This is no doubt the case, and is owing to their more frequent exposure to sudden transitions of temperature.

CONVULSIONS.—Another somewhat obscure name, to which have been ascribed 681 deaths. Of these, 628 are charged to children, many of which cases of convulsions were, in all probability, the mere forerunners of death from attacks of disease under which the children had been labouring, and to which cause the death should have been ascribed.

CONGESTION OF THE BRAIN gives 421 deaths; DISEASE OF THE HEART, 305; DISEASE OF THE STOMACH AND BOWELS, 267; APoplexy, 194; DROPSY, 225; OLD AGE, 234; and GUNSHOT WOUNDS, 310. Of these wounds 308 were in soldiers, and having been received in the field, should not by right be calculated in our mortality.

In closing this report we would call the attention of the College to the following remarks contained in the report of the registration department of the Board of Health of our city, with reference to the use of a more correct and plainer terminology for diseases by physicians, when making their returns of deaths to that office. If the hints contained therein do not apply to the fellows of the College, they may be suggestive to others into whose hands this report will fall.

"In the foregoing table, presenting the total mortality of the year, much looseness of language has occurred in the naming of the various diseases, by those whose duty it is to make returns of deaths. Nor is it alone in the carelessness or tautology of names applied that we would complain, but of the obscure or ambiguous, and in numerous instances obsolete terms that are used to express some of those diseases that terminate in death almost every week, and are known by familiar titles to the reader of the mortality returns."

* * * * *

"If the profession would confine itself to a nomenclature of plain English terms, or even adopt, for general use, the classification of diseases and the nomenclature as approved by the National Medical Convention in 1847, when it met in this city, much trouble and time would be spared this department, and we should not be compelled to disfigure our public record with such terms as 'Spanemia,' 'Helminthiasis,' 'Vulnus Scopetarium,' 'Born too soon,' 'Nably Information,' 'Black Small Pox,' 'Pulmonary decline,' 'Miscarriage,' a child; 'Still-born,' a child two years old; 'Chlorosis,' a boy six years old; 'Pains,' 'Frosted Feet,' and many others equally obsolete and ridiculous, which certainly cannot elevate the standard qualifications of the medical profession in our city.

"It is earnestly to be desired, therefore, that measures may be taken either by the Board of Health or the physicians of Philadelphia, to correct an evil which is increasing every year, and to secure for the future a more uniform and less complicated nomenclature, for all practical purposes, than the one now employed by those making returns of deaths to this office."

Internments in the City for the Year 1863.

SEX.	DISEASES.	TOTAL.	AGES.												NATIVITY.				
			Under 1 Year.	1 to 2	2 to 5	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	110 to 120.	
	Abscess .	68	26	10	9	3	4	2	3	2	14	9	5	6	4	2	1	1	1
	Apoplexy .	194	109	85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Aneurism .	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ brain .	7	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Abortion .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Anæmia .	13	7	6	6	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	Amputation .	3	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Asphyxia .	37	24	13	10	32	1	1	1	1	1	1	1	1	1	1	1	1	1
	Aphite .	6	4	2	3	2	4	1	1	1	1	1	1	1	1	1	1	1	1
	Asthma .	29	10	19	3	1	1	1	3	1	1	1	1	1	1	1	1	1	1
	Albuminuria .	10	4	6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	Angina pectoris .	8	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Amorphocele .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Anorexia .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Burns and scalds .	85	39	46	50	35	5	13	31	11	3	12	6	6	1	1	1	1	1
	Biliary calculi .	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Boil .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Gauze .	71	22	62	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ breast .	11	11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ bladder .	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ bowels .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ face .	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ liver .	8	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ lungs .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ mouth .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ pylorus .	3	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1
	“ rectum .	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ stomach .	41	16	25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ spleen .	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ throat .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ uterus .	40	40	21	32	10	2	1	1	1	1	1	1	1	1	1	1	1	1
	Casualties .	120	99	21	23	11	9	16	8	6	18	26	1	1	1	1	1	1	1
	Cloudy .	444	215	198	49	117	218	50	8	1	1	1	1	1	1	1	1	1	1
	Congestion .	6	2	4	1	4	2	1	1	1	1	1	1	1	1	1	1	1	1
	“ brain .	421	211	180	156	132	86	45	29	17	41	21	11	16	9	1	5	3	1
	“ bowels .	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ chest .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	“ heart .	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Interments in the City for the Year 1863.—Continued.

Internments in the City for the Year 1863.—Continued.

Intruments in the City for the Year 1863.—Continued.

DISEASES.	SEX.	AGES.	NATIVITY.		Unknown.
			U. States.	Foreign.	
Fryespelas			54	15	5
Gynaecia			1	1	1
Exposure			1	3	1
Emphyema			1	3	1
Encephala			1	3	1
Endanglement of heart			2	2	1
<i> </i> liver			1	1	1
Fever			1	1	1
<i> </i> brain			1	1	1
<i> </i> billions			1	1	1
<i> </i> estarchi			1	1	1
<i> </i> congestive			1	1	1
<i> </i> continued			1	1	1
<i> </i> eruptive			1	1	1
<i> </i> gastric			1	1	1
<i> </i> hectic			1	1	1
<i> </i> inflammatory			1	1	1
<i> </i> Intermittent			1	1	1
<i> </i> low			1	1	1
<i> </i> malignant			1	1	1
<i> </i> miasmatic			1	1	1
<i> </i> nervous			1	1	1
<i> </i> purperal			1	1	1
<i> </i> petechial			1	1	1
<i> </i> pernicious			1	1	1
<i> </i> rheumatic			1	1	1
<i> </i> remittent			1	1	1
<i> </i> spotted			1	1	1
<i> </i> searchit.			1	1	1
<i> </i> typhoid			1	1	1
<i> </i> typhos.			1	1	1
<i> </i> traumatic			1	1	1
<i> </i> yellow.			1	1	1
Fracture			1	1	1
<i> </i> arm			1	1	1
<i> </i> leg			1	1	1
<i> </i> shoulder			1	1	1
<i> </i> skull			1	1	1
<i> </i> spine			1	1	1

Internments in the City for the Year 1863.—Continued.

Interments in the City for the Year 1863.—Continued.

Internments in the City for the Year 1863.—Continued.

Internments in the City for the Year 1863.—Continued.

Pirogoff's Amputation.—Dr. ADDINELL HEWSON read the following paper on this operation, illustrating it by cases, photographs, casts, and a specimen of bone:—

CASE I. Jno. Nespar, æt. 9 years, residing with his parents at 212 Juniper St., was injured on the 28th of August, 1862, in Broad St. near Race. He was standing at the time of the accident on the projecting ledge on the side of the central one of three coal cars, which were being drawn along the railroad, when he was caught by the breaker of a car going in the opposite direction and thrown on the ground in such a manner that the last of the cars which he had been on ran over his left foot and crushed the metatarsal bones close to the tarsus. He was conveyed to the hospital immediately after the accident, and, shortly after his arrival there, the foot was amputated. The choice of operations being between an amputation of the lower third of the leg, either as a Syme or higher up, and an amputation after the method of Professor Pirogoff, we determined to try the latter. In performing it the posterior tibial artery got wounded; beyond this nothing of interest occurred, the operation having been performed by the method as originally proposed.

The flaps were brought together by leaden stitches, and all the ligatures of the arteries, save that at the plantar, were brought out at either angle. No dressing was applied over the wound, but it was left uncovered. The stump was put in a fracture-box, and the weight of a brick, about $4\frac{1}{2}$ lbs., was applied by means of a long and broad strip of adhesive plaster on the back of the leg to overcome all tendency to displacement of the os calcis, by contractions of the muscles attached to the tendo Achillis. Union of the flaps was quite perfect on the eighteenth day, when it was found that the fragment of the os calcis was firmly adherent to the end of the tibia. He was kept in bed for a month after this, and discharged from the hospital on the 17th of November, having been walking about on his stump for some time previous to this date. Fig. 1 represents a cast of the stump.

CASE II. Tom Bowers, a tall, thin, but well-formed seaman, æt. 48 years, applied for admission to the Pennsylvania Hospital, on the 3d of March, 1863, on account of distortion of his right foot, the result of an injury received on board of one of the Mississippi gunboats in the attack on Vicksburg, in the month of June previous. The foot had then been crushed by the recoil of a gun-carriage, and the bones of the metatarsus had evidently (according to the patient's account) been much comminuted, with great contusion of soft parts, but no great amount of laceration of integument. Attempts had, therefore, been made to save the foot. Extensive phlegmonous inflammation ensued, and extended up the leg, which bore the marks of the free incisions which had been made for the escape of the pus.

The foot itself was distorted by the conglomeration of the bones, through the callus thrown out for their repair and by a large mass of cicatricial tissue on the plantar surface, all of which combined to draw the toes down and prevent the patient walking on the sole. It was thus only by a very forced elevation of the fore part of the foot and throwing the whole weight on the back of the heel, that he could get along on the limb. For this deformity he applied at the hospital, desiring to have the

Fig. 1.



leg amputated. It was evident that a partial amputation of the foot was the only remedy for him. The cicatricial mass on the sole would not allow of a Lisfranc tarso-metatarsal disarticulation, or of a Chopart (inter-tarsal). It was, therefore, determined to do a Pirogoff amputation, and the patient was admitted for the purpose.

Fig. 2.



Some symptoms of delirium tremens manifested themselves on the following day, and these were soon developed into a well-defined attack of that disease. The operation was consequently delayed until the 28th of the month (March) when it was performed in the presence of the class, in connection with another amputation (a Chopart) for a recent railroad injury.

Owing to the rigidity of all the tissues of the foot, considerable difficulty was experienced in effecting sufficient dislocation at the ankle to saw off the os calcis at the proper angle. Indeed this was found impossible without injuring the soft parts. The bone had consequently to be broken after it was partly sawn through.

The stump was dressed in the same way as Nespar's, but did not do well; the healing took place very slowly. Still the patient was well enough to be discharged on the 25th of May, eleven weeks after the operation and some two months before the patient operated on—the same day—was discharged. The os calcis was noted to be firm to the tibia on the 26th day.

This man after leaving the hospital resumed his old intemperate habits, and died in the month of January of this year, about nine months after the operation.

The cast which is here presented was made after death, and it will be seen, his stump (fig. 2) was as satisfactory in form as any of the others.

The *post-mortem* examination of the case will be referred to hereafter.

Fig. 3.



CASE III. Jas. Maxwell, at 10 years, residing near the Drove Yard, West Philadelphia, was injured on the Penn. R. R., on the 18th of July, 1863, by a freight car, which passed over his right arm and foot, crushing the former above the elbow and the latter close up to the instep. He was immediately conveyed to the Pennsylvania Hospital, where both limbs were amputated a few hours after the accident. A flat amputation was performed in the upper third of the arm, and a Pirogoff at the ankle.

The boy reacted well, and the operation at the ankle did remarkably well under dressings of cerate and extension by means of the weight attached by adhesive strap along the back of the leg. Union took place without much suppuration, the flaps cicatrizing rapidly throughout save at the angles, and immediately in front, at a point corresponding with the union between the tibia and fibula. The os calcis was firmly adherent on the twenty-fourth day.

The operation on the arm did not, however, do so well. Abscesses formed and burrowed up under the cellular tissue, and necrosis of the end of the humerus took place. This delayed the boy's discharge for over two months, during which time he ran about on

his stump in the wards, and thereby developed the calf of this leg to a size but little less than that of its fellow.

The cast which is here presented (fig. 3) was taken a few days before his discharge, which was given him 159 days after the operation.

CASE IV. Morris Lamme, aged 12 years, residing in Erie Street, was injured on the 10th of August, at the corner of Seventeenth and Washington Avenue, in attempting to get off a freight train of the Penna. R. R. whilst in motion. The wheels of a car passed obliquely over his right foot, crushing it close up to the ankle-joint, literally leaving nothing but the heel. He also sustained a severe blow and cut on the head, and an extensive bruise in the lumbar region. He was brought immediately to the Pennsylvania Hospital, where a Pirogoff amputation was performed within four hours after the accident occurred.

Owing to the extent of the injury on the sole and inside of the foot, the incision had to be made further back on the sole than was done in the other cases, and the portion of the os calcis preserved was consequently less.

The posterior tibial was preserved intact. Four ligatures in all were applied to bleeding orifices. The edges were united by leaden sutures, and a dry dressing was used with the extending weight. The wound united rapidly, having suppurated very little. The os calcis appeared to be firm to the tibia on the twenty-fourth day. About this time, however, he was seized with fever, rigor, and profuse sweating, which were found to proceed from suppuration in the bruised tissues on his back; a large abscess formed here, and continued to discharge after it was opened—for over thirty days. This delayed his getting up until six weeks after the operation.

At this time the whole wound was united, save a small fistulous orifice on the front, which showed but little disposition to heal during the remainder of his stay in the institution, which continued until the 21st of November. Shortly after his discharge he visited us, and a small piece of sponge tent was then passed down into the bottom of this sinus, which was found to terminate in the bursa between the tibia and fibula. This was allowed to remain in for three days when it was removed, and the whole cavity rapidly closed up in six days' time.

He had an artificial limb applied by Mr. Palmer, in the month of January, and is making good progress in its use. Fig. 4 represents a cast of the limb. He can already run with facility on it.

CASE V. Orion Crandle, aged 20 years, from Grant Co., Wisconsin, and a private in the 7th Wis. Regiment, was wounded on the first day of the battle of Gettysburg (July 1, 1863) by a bullet in the right foot. From the battle field he was sent to the U. S. Military Hospital, Broad and Cherry, where he arrived on the 6th.

The wound did not appear at first to be a serious one, and our attention was not called to it until some time after his admission, when the foot and ankle had become very much swollen and inflamed. On probing the wound it was found that the ball had passed through the astragalus, and must have consequently implicated the ankle-joint. It was, therefore, determined

Fig. 4.



to amputate the foot, and, as the tissues of the heel appeared sound, it was decided to attempt a Pirogoff, which was done on the 28th of the month (July).

On opening the joint it was ascertained that the malleoli had both become considerably denuded by the suppuration which had been going on in the joint, so that it became necessary to remove the ends of both the tibia and fibula an inch above the joint. The denudation of the bones led us to form a rather unfavourable prognosis for the operation. The inflamed condition of the tissues, especially of those composing the anterior flap, caused delay in the process of union, which took place, however, throughout by granulations, and the portion of os calcis was found to be firmly adherent to the tibia on the 28th day after the operation. When the cicatrization of a greater part of the flaps had been accomplished it was discovered that two suppurating points, one quite on the front of the leg and the other behind the line of the fibula, communicated by sinuses with a large piece of necrosed bone evidently belonging to the fibula, and which had pushed the os calcis somewhat to the inside before it had become firm to the tibia. These sinuses were dilated by sponge tent and this portion of bone detached without even disturbing in the least the union between the tibia and os calcis.

The patient is now just beginning to throw his weight on the stump, which has been entirely healed for about a month. He ran with ease on

the end of the stump before the members of the College at the meeting at which this communication was made.

Fig. 5 is a representation of a cast of the limb. Two of the other cases, namely, Nespar and Lammey, were also presented at this meeting.

These five are all the cases which have been operated on by the author of this communication. In all a cure followed rapidly. In two especially the result was least to be expected. These were the adults, one of whom was a seaman, advanced in years, and who had been leading an exceedingly intemperate life; and the other a soldier, who had been wounded in a battle after long and tedious marching in pursuit of the enemy, and who was operated on four weeks after receiving his wound in a military hospital, where gangrene was prevailing to a very great extent at the time. How much the firm and speedy union of the bones in all these cases was the result of the expedient resorted to, namely the strip of adhesive plaster and weight, to prevent the contraction of the muscles attached to the tendo Achillis, is a question which we are not prepared to answer. The possibility of such a union not taking place has been the only theoretical objection apparently of any importance advanced

against the operation. But how far such an objection has been realized in the experience of others we have not been able to ascertain. Our own experience certainly points to its being of little, if any, value. For surely there could not be found two more unpromising cases for any operation than those of the adults here reported, and it is against the operation in adults especially that this objection would seem to have greatest force. The very perfect character of the union which took place between the bones in Bowers' case, as is to be seen in the specimen (see figs. 6 and 7) which

Fig. 5.



we had the good fortune to obtain after his death, furnishes as strong a refutation as a single instance could of this theoretical objection. Nothing

Fig. 6.



Fig. 7.



could be more satisfactory than the manner in which the cancellated structure of these bones has become blended together, making as perfect a union as ever takes place in a simple fracture or in a wound of the soft parts themselves. And this was the more remarkable considering the man's age (48 years) and his habits, which eventually produced his destruction. In cleaning the specimen much of the new cancellated structure thrown out in front, where the os calcis had to be broken, was removed.

The results of these five cases naturally suggest an inquiry as to the real value of this operation of Prof. Pirogoff.

Sufficient data have not yet been furnished to determine its rate of mortality, but admitting it to be no greater than that for amputations of the leg in the lower third, the point of election now adopted in consequence of the increased facilities of obtaining artificial legs and which has a mortality of about one in seven, or nearly one-half of what used to be the result at the old point of election in the upper third, we get by this operation of Prof. Pirogoff a stump preferable in many respects to any that can be obtained higher up the limb. In the first place this operation furnishes a stump which the patient can walk on, and this it does far better than its rival, the Syme operation, for it affords a better bony point of pressure and a greater length of limb.

All but one of the four cases operated on at the Pennsylvania Hospital were walking about freely on their stumps before they were discharged from the institution; one of them and that an adult was discharged seventy days after the operation. The exceptional case was Morris Lammy, who, it will be remembered, had a small sinus communicating with the bursa between the tibia and fibula, and which was speedily healed by the use of a single piece of sponge tent after he left the hospital.

The case at the military hospital did not walk on his stump as early as he might otherwise have done, in consequence of the necrosis of the fibula, which did not, however, prevent the union of the os calcis with the tibia, which became firm in 28 days.

No such results as these have ever been obtained from the Syme operation—for not more than one-half of the cases which have applied to Mr.

Palmer for artificial limbs have been able to bear any pressure whatever on the end of the stump, and that a long time after they were entirely healed. The only case of a Syme amputation of which we have had the opportunity of seeing the result was unable to bear his weight on it a year after it was made.

The least amount of shortening furnished by any of the cases of Pirogoff here reported was one inch, and the greatest two inches; these were both the adult cases, whereas the Syme always gives a shortening equal to the whole depth of the foot, or about from two and a half to three inches.

Then, in the second place, by this operation the tendo Achillis is in no wise injured, but, on the contrary, it is preserved intact, and becomes firmly secured to the end of the limb by the union of the portion of the os calcis to the end of the tibia. By effecting this we preserve the power of the gastrocnemius to act as a flexor of the leg, and thereby give our patients great facility of locomotion in artificial limbs.

Most persons who have undergone an ordinary amputation of the leg can walk, on an efficient artificial limb, with great ease, and even at a rapid rate, after some practice in its use; but few, if any, can however undertake to run with such an adjunct. As far as our experience goes, we have never seen a single instance, and the experience at Mr. Palmer's establishment for furnishing artificial limbs tends to confirm this; for they can recall but a single instance of any other than a Pirogoff in which this form of locomotion was possessed, and that was of a gentleman who had had his leg amputated, very low down, early in life, and who had been wearing a limb ever since. All the cases of the Pirogoff stump to which they have applied limbs have, on the contrary, soon acquired the power to accomplish this gait. The boy Nespar is the only one of those here treated who has been wearing a limb long enough to be accustomed to it, and he can run with very great facility. The soldier can run without any. Now, there is a difference between walking and running, which is not, simply, as some suppose, in the velocity with which a person moves over the ground, or the violence of the exertion which he makes to accomplish the locomotion—for a man can walk more rapidly than a child can run, and when we look at them thus moving, we at once recognize a vast difference in their gaits.

In *walking*, both feet are upon the ground at the beginning and at the end of each step, and are never both off the ground together. But in *running*, as Professor Humphry remarks,¹ the trunk, instead of being quietly delivered over from one leg to the other, which is already on the ground to receive it, is thrown forward with a spring by the muscles of the leg which is leaving the ground, and *remains for a time suspended in the air*, or, rather, *flying through the air*.

Now, in walking, it must be remembered, the heel of the foot which has been advanced touches the ground before the sole and toes, and that of the foot in the rear becomes elevated until its toes only are on the ground; these, then, are raised by the flexion of the ankle, and the limb, slightly shortened by the bending of the knee, is swung from behind, close beside the other limb, and advanced in front of it so as to be planted on the ground as its fellow had been.

But in *running*, the heels scarcely, if ever, touch the ground, and "the feet revolve almost exclusively upon the balls of the toes, and the advanced limb touches the ground in a more bent position, both as regards its knee and hip-joints." Indeed, both the carrying and the swinging limb are

¹ Humphry's Human Skeleton, London, p. 587.

more bent in running than in walking, when they are placed vertically beneath the trunk, whereby the swinging movement, and, consequently, the step, are still further quickened, the propulsive power is increased, and the body is carried at a lower level.

It is thus evident there is a difference between walking and running, both as regards the movements of the feet and the flexion of the limbs. It is, therefore, important for us to determine which of these is really essential.

Now it is well known that a person can walk on his heels. So, also, it is possible, although very fatiguing, for him to propel himself, in the same way, after the manner characteristic of running—that is, with a period during which neither extremity is touching the ground. Again, one can run, awkwardly it is true, with his feet held rigidly at such an angle as will cause them to come flat on the ground at each step.

It is, therefore, evident that the movements of the feet, which are different in the two gaits, and important in both, are not absolutely essential in either.

Then, again, a person with an ankylosed knee-joint can manage to walk with such, by swinging the limb around from the vertical line, whilst his weight is being borne by the other. He cannot, however, run with such a knee-joint, and this shows that flexion of the knee is essential to that gait. But flexion of the knee, it will be said, is performed chiefly by the hamstring muscles, and the gastrocnemius is always spoken of as an extensor of the foot.

This we will admit to be the case in walking, where there is not much flexion of the knee required, but great latitude of movement in the foot; but in running, especially at a rapid rate, the foot, it will be remembered, is kept in a more or less extended position, and extreme and rapid flexion is required at the knee-joint. Under such circumstances the action of the gastrocnemius must be either to steady the foot in its extended position or flex the knee. Its connection by the tendo Achillis to the os calcis naturally suggests the idea that the chief function of this muscle is that of an extensor of the foot, the heel of which can only be drawn up by this tendon; but we overlook the fact that there is another muscle, and a powerful one, attached, by this same tendon, to the heel, whose function is more evidently that of an extensor of the foot. We refer to the Soleus, which Professor Pancoast has demonstrated, by a very extensive clinical experience, to be the source of the retraction or elevation of the heel in various forms of club-foot. He has pointed out the fact that the gastrocnemius is flaccid in these cases, and the soleus hard, and in the state of firm tension—so that it is not so very evident that the gastrocnemius is chiefly occupied in extension of the foot.

In what other way can an amputation of the leg low down diminish or destroy the power of running—seeing it is preserved by the Pirogoff—unless it be by destroying the part which the gastrocnemius performs in the flexing of the knee? for the difference in the length of the stump is not sufficient to account for it, and this muscle is the only one in any way concerned in such motion, which function is entirely destroyed in the one, and not in the other.

In every amputation of the leg it will be found that atrophy always ensues of the muscles which are involved in the operation.

This at first resembles that which occurs in a broken limb, from long rest and disuse—but, unlike it, it does not cease when the patient begins to walk about, even on an artificial limb; on the contrary, it increases, even in young and growing persons, so that they have, from time to time, to

increase the thickness of covering or stocking with which they cover the stump, to keep it fitting properly in the socket originally made to receive it.

The rapidity of the rate at which this wasting goes on in a stump does not seem to be much influenced by the point at which the operation has been performed, as will be seen by the following table, prepared by one of my pupils, Mr. Abraham Sharples, from measurements taken in the order in which the cases presented themselves, in Mr. Palmer's establishment for artificial limbs. No data are given by which an approximation can be reached of the length of time which had elapsed in these cases after the operation; but, in the large number of cases furnished for each class, it will be but fair to suppose that there was no difference in this respect.

Location of the amputation.	No. of cases.	Mean measurement of sound leg at the largest part.	Mean measurement of stump.	Difference.
In upper third 56		13.58	11.20	2.38
" middle " : : 42		13.72	11.21	2.51
" lower " : : 15		14.03	11.73	2.30
	113	13.77	11.38	

This same atrophy goes on in all the muscles of the leg after a Pirigoff, save the gastrocnemius, which, soft and flabby at first, soon becomes firm, and can be felt in a state of more or less tonic tension when the patient stands on his stump.

Thus, Crandle, who is just beginning to walk, has the muscle so soft and flabby that it was pushed to the side in an attempt to take a cast of the limb; whereas the limb of the man Bowers, who, it will be remembered, died within a year after the operation, and about seven or eight months after he had begun to walk freely on the stump without any artificial adjunct, presented, at the *post-mortem* examination, the most satisfactory evidence of the preservation of this muscle, its healthy, fleshy fibre contrasting singularly enough with the flabby and greasy condition of the other muscles of the leg.

Then the boy Nespar, who has been walking on one of Palmer's legs for a year, has never had to use any additional covering than that originally put on his stump.

All these reasons seem to us to furnish the strongest arguments for the preference we give to this operation of Professor Pirogoff over any amputation of the leg. But this is not all; we even think it preferable to either a Chopart (an intertarsal) or a Lisfranc (a tarso-metatarsal) disarticulation in the foot, where they can be performed, and for the following reasons:—

In both the Lisfranc and Chopart, and especially in the latter, there is a tendency to retraction or elevation of the heel, so that the weight of the body is thrown, in walking, on the cicatrix or end of the stump, from either of which serious inconvenience must ensue.

As an evidence of the seriousness of this inconvenience, we may mention that, as long ago as 1815, M. Villermé stated that one-twentieth of the soldiers who had undergone amputation in the tarsus, and were admitted in the Hôtel des Invalides, had to be subjected afterwards to amputation of the leg on account of inflammation and ulceration of the stump.

Now this difficulty is universally attributed to the contraction of the muscles of the tendo Achillis, and the various expedients recommended for its prevention and relief have been based on this notion, but a careful consideration of the form of the human foot and its manner of supporting the

body will show this distortion must necessarily follow these operations of Lisfranc and Chopart, independent of any muscular action which may be brought into play.

Thus the foot is constructed in the form of an arch, the summit of which is at the astragalus. The two pillars of this arch differ very much from one another. The posterior one is about half the length of the anterior. It consequently descends far more abruptly. It also consists of but a single bone, the os calcis, whereas the anterior pillar not only includes the metatarsal, but also the cuboid, the three cuneiform, scaphoid, and the head and neck of the astragalus, "so that when the foot rests flat upon the ground the chief part of the weight is transmitted from the tibia forwards."¹

Now lop off a portion of this anterior pillar, and that which is left must of necessity become so much depressed that it will touch the ground in standing, for it is through it that "the chief part of the weight is transmitted." This will throw the weight still more forward, and less of it will be transmitted through the os calcis. Indeed, the more perfectly a foot is arched, that is, the more vertical its os calcis is placed, the worse must be the distortion after one of these operations; for the plantar face of the os calcis and the lower edge of the scaphoid facet of the astragalus must, in the Chopart operation, be driven on the ground when any weight is thrown on the limb, and a similar depression, though in a less degree, must occur in the Lisfranc.

A complete and permanent severing of the tendo Achillis cannot have any effect in preventing such a consequence, no matter what influence the muscles attached to that tendon might exert in increasing the evil.

To all this it may be answered that cases of successful prevention of the elevation of the heel after these operations by a division of the tendo Achillis have been reported, by such men as Velpeau, Robert, and others. This we cannot deny; but others equally reliable have reported tenotomy an absolute failure in these cases; and how are we to reconcile the discrepancy between such authorities?

We had thought ourselves successful in preventing the difficulty after the Lisfranc operation by means of the weight, as we have used it after the Pirogoff; for when we discharged the cases (four in number) from our care, they did not evince much if any disposition to it, but when we came to examine these cases a year or more afterwards we discovered the deformity as complete as when no expedient is resorted to. A temporary success was, with us, as it has been, probably, with others, mistaken for a permanent result. Indeed, it would seem impossible for any expedient looking to a prevention of the contraction of the muscles of the calf as the source of the difficulties to succeed; and it is equally impossible to restore the proper elevation of the os calcis in front after either of these operations. Hence we think our preference for the Pirogoff well founded.

Spotted Fever. Dr. JEWELL reported a case.

The following case of the epidemic disease which has prevailed in some sections of our city for upwards of a year, visiting several of the adjoining neighbourhoods, and making its appearance in other districts of our country under the popular, but perhaps erroneous title of "spotted fever," may prove of some interest to the pathologist, especially through the revelations

¹ Humphry, op. cit., p. 494.

of the *post-mortem*, in the event of its not affording a clear illustration of the true character of this formidable disease.

Leonard S., aged nine years, residing on 4th above Race St., in this city, was in the enjoyment of perfect health until Thursday evening, the 11th of February, ult., when he complained of uneasiness and stiffness in his lower jaw and muscles of the throat. No particular notice was taken of it, and he retired to bed as usual. During the night his mother said he was restless, and continually throwing off the bed-clothes. In the morning he declined getting up, telling his mother he could not go to school, as he was sick. She noticed that his speech was thick, mumbling his words, as if his tongue or throat were swollen, and fearing he was not well, encouraged him to remain in bed.

Late in the morning, however, he made his appearance in the sitting room, kept close to the stove, complained of being cold, and in a short time had a severe chill, his skin assuming quite a purplish hue. He was covered up on the settee, some warm tea was given him, and as the intensity of the chill subsided, his mother gave him two purgative pills.

In the afternoon he became very sick at the stomach, and commenced vomiting; his skin, however, retaining its bluish or collapsed appearance. Continuing to grow worse, retaining nothing on his stomach, and complaining of violent pain across the forehead, with extreme restlessness and apparent suffering, Dr. Housekeeper, of Kensington, was sent for, who saw him at 10 o'clock in the evening of Friday. The doctor informed me that he observed nothing in his symptoms warranting alarm, and prescribed a neutral mixture for his gastric irritation, with mustard on the surface of the stomach, and also to the back of the neck and ankles, for his pain in the head.

During the night his mother said he continued to be restless, vomited frequently, would cry out with the pain in his head, and when touched or moved, would complain of extreme muscular soreness.

On Saturday morning the Dr. found him in convulsions, and his body covered with what he called a purpura eruption.

I saw this patient by request of Dr. H. about 2 P. M. Saturday; found him unconscious, lying on his left side, knees drawn up, muscles of the back of the neck retracted, and head thrown backwards, permanently. His eyeballs flushed, with dilated pupils, and fixed steadily in one direction, the lids being wide open, and the pupils insensible to light. The skin was below a natural temperature, lips and hands congested and of a dark purplish colour, pulse slow, but scarcely perceptible. Scattered over his face, body, and extremities, were to be seen numerous spots resembling petechiae, of a dull red colour, varying in size from a pin's head to that of a half dime, not elevated nor affected by pressure. The boy appeared restless, in constant motion, with considerable jactitation of muscles, and making frequent spasmodic efforts to vomit. I ordered dry cups to the nucha and spine, mustard to the lower extremities, and a stimulating turpentine enema. His condition forbade the administration of further treatment, as the case appeared to be hopeless. He passed into another severe and protracted spasm after I left, and died at 5 P. M., after an illness of 48 hours.

By permission, an autopsy was made by Dr. Packard, on the next afternoon, 24 hours following the death, in the presence of Drs. Housekeeper, Mayburry, and Mr. Ewing, student of medicine, and myself. I am indebted to the Dr. for the accompanying notes of the appearance of the different structures, as presented by the examination.

Body not very rigid. Skin very white; hair red. A few scattered

petechiae were observed over the chest, arms, belly, and legs; none on the face. A good deal of hypostatic congestion of the posterior or under portions of the body, of the scalp over the occiput, and of the ears, was noticed.

On cutting through the scalp, the blood flowed away more freely than usual, and it was found that it was abnormally fluid within the veins.

The vessels of the dura mater were markedly congested with fluid blood, very dark in colour. A yellow effusion existed in the subarachnoid space; it proved to be of a serous character, and to exist in the spinal canal also.

The substance of the brain was firm, with very little if any congestion. In the lateral ventricles there was a somewhat abundant reddish serum, and on cutting into the brain substance anywhere, the gap would soon fill up with serum exuding from the cut surfaces.

Thorax.—The lungs were entirely healthy, except that the middle lobe of that on the right side was fastened to the chest-wall by old pleuritic adhesions.

About 5ij of serum were observed in the pericardium. The heart was firmly contracted, and contained some small, very black, softish, currant jelly-like clots. One of these, in the left ventricle, was in part firm and pale. The blood in the cardiac veins was fluid, and could be readily pressed along the vessels, returning immediately upon the pressure ceasing.

Abdomen.—Liver healthy. Gall-bladder distended with bile. Spleen healthy. Pancreas also.

The blood in the mesenteric veins presented the same fluidity as did that in the thorax and cranium.

Mesenteric glands enlarged, and many of them congested.

Some purpurous spots existed here and there on the mesentery.

The mucous membrane of the stomach was very deeply congested at the central part of the organ, and especially towards the lesser curvature; the congestion fading towards the cardiac and pyloric extremities.

Peyer's patches were normal.

The kidneys were deeply congested. A portion of the left kidney, in which the congestion was deeper than it was in the right, was sent to Dr. Fricke for examination.

One of the purpurous spots on the surface of the abdomen was cut through, and found to be caused by a deposit or ecchymosis in the substance of the true skin, and not upon a mere effusion beneath the cuticle.

Dr. Fricke examined the kidney minutely, and in a note, writes:—

"The minute anatomical structures are all normal, and although the colour was such as to induce the belief that the organ might have been highly congested, I need not remind you that the deep colouring of the kidney in *post-mortems* is in no wise a trusty symptom as to the healthy or unhealthy state of the organ."

From the character of this case, and the results as disclosed by the autopsy, together with what I have observed in several similar cases coming under my notice, and from all the information I have gathered through other sources, I am inclined to the opinion that the disease still prevailing in our city, and designated by many as "spotted fever," is not altogether new or unknown either in Europe or in this country. That it has not only been noticed by several writers on the practice of medicine, but has been described by them under the name of cerebro-spinal meningitis, and has, within a few years past, prevailed at different periods, both in Europe and in this country, in the character of a formidable epidemic. According to a statement made by Dr. Bell, in his work on the *Theory and Practice of Medicine*, an analogous disease had prevailed at different times in

Europe between 1510 and 1805. This same author furnishes complete references to its appearance in different cities and towns in France between 1837 and 1842. Of its having been noticed in Italy in the winters of 1839, '40, and '41, and in Gibraltar in 1844. Dr. Bell also quotes, Dec. 1842, from a paper on the same disease by Dr. Richardson, in the *Western Med. and Surgical Journal*.

Dr. Wood, in his *Practice*, describes it as occurring epidemically, and refers to *Ranking's Abstract* for the account of its having prevailed in Ireland in 1847, as described by Drs. Darby and Mayne, in the *Dublin Journal*.¹

In this country the disease made its appearance at the commencement of the present century, when it occurred at first in Massachusetts, and is described by Dr. Gallup, of Vermont, and North, of Massachusetts, as "spotted fever." In the 1st vol. of *Chapman's Medical Journal*, p. 167, will be found a review of a pamphlet by Dr. E. Hale, Jr., of Boston, of spotted fever, as it prevailed at Gardiner, Maine, in the spring of 1814; and although it has been doubted recently whether the epidemic, as described by him, was the disease now existing in this city, I believe it to have been essentially the same, although it is true, its visitation at that early period exhibited symptoms which are not prominent in the present epidemic.

The reviewer of the above paper refers to the fact of "spotted fever" having appeared in 1806, in different parts of New Hampshire and Massachusetts, as described by Gallup and others, and after lingering a short time in that part of the country, gradually spread itself over the whole of New England, entered into New York and the Canadas, from thence pursuing a direct track through the interior of Pennsylvania, invaded Ohio and Kentucky, extended to northwestern Virginia, and finally to the southern extremity of the United States. He also traces its appearance in Philadelphia in 1813, where he says for a short period it assumed a malignant form, and the victims of its ravages were numerous, after having committed its frightful ravages upon the inhabitants of the circumjacent country.

In the *N. O. Med. and Surgical Journ.*, vol. v., p. 295, will be found an interesting history of the disease as it appeared in Montgomery, Ala., in the winter and spring of 1848, under the title of epidemic meningitis.

In vol. 4th of the same journal, will be found papers by Dr. Hicks, of Vicksburg, and Dr. Taylor, of Whiteville, Tennessee, as the disease prevailed to some extent in those places.

The report of the Medical Society of Pennsylvania, for 1863, contains an account of the epidemic as it prevailed in Montgomery Co., in the winter and spring of '63.

Within a few days, I have had access to a carefully drawn up history of "spotted fever," or more properly "epidemic meningitis," by a Fellow of the College, giving an account of the disease as it has prevailed, especially in the United States, tracing its visitations as far back as the commencement of the present century, and following its appearance down to the present time. The writer of this interesting history has no hesitation in identifying the present epidemic with the spotted fever as it has prevailed

¹ An account of the disease is also presented by Dr. Thacher, in his *American Practice of Medicine*, as it prevailed sixty years ago in the New England States. This account is based upon a report made to the Mass. Med. Society by a committee consisting of Drs. Thomas Welsh, Jas. Jackson, and John C. Warren.

Dr. Condie, in the 5th edition of his work on *Diseases of Children*, gives a very elaborate account of the disease.

"at different periods, in several portions of Europe and of the United States; exhibiting, it is true, in some of its visitations, certain symptoms which were absent in others, and hence receiving from the writers, to whom we are indebted for a history of its several occurrences, different names according to the predominance of some one symptom or set of symptoms." He is convinced that they are essentially the same, wearing the same livery, and characterized by similar "features, viz., suddenness of attack, intense headache and spinal pain, followed by stupor or coma, and in the greater number of cases, by a peculiar eruption upon the surface, having a very close resemblance to the ecchymoses of scurvy."

The author of the history to which I refer gives an outline of Dr. Thacher's description of the disease, which in all respects corresponds with that which is now prevailing in our vicinity.

He also presents an account of the disease as given by Dr. Edward Page, of Hallowell, Maine, as it was observed by him between 1810 and 1816. This writer, he says, makes four divisions or varieties of "spotted fever," namely: 1st, the tetanic or cerebro-spinal; 2d, the catarrhal or pneumonic; 3d, the gastro-enteric; 4th, the algid.

There may be those familiar with the several forms of the disease, as seen at this time, who will be in possession of sufficient evidence to corroborate the truthfulness of the divisions, as suggested by Dr. Page. We are not, however, prepared to adopt his theory. His first and second divisions include the symptoms to be found with very little variation among the cases I have witnessed.

The disease prevailed extensively in Central and Western New York in 1857, as will be seen in the *Transactions of the Medical Society of the State of New York*, in three several papers by Dr. Thomas, of Utica, Dr. Kendall, Clay, Onondaga Co., and Dr. Squire, of Elmira.

Case of Cerebro-Spinal Meningitis, sometimes called "Spotted Fever."

—Dr. STILLÉ related the following case:—

A young gentleman, 19 years of age, of uniformly good health and of a sound constitution, resided in one of the most salubrious districts of this city. He was occupied every day in a wholesale dry-goods store in Chestnut Street, between Second and Third Streets, and is not known to have been in any neighbourhood or house in which the disease he was attacked with existed. An elder brother had been ill with typhoid fever from the first week in January, and, during that month, had often been attended by night, and, occasionally, during a portion of the day, by the subject of this notice. But from the first week in February, this attention had become unnecessary, and there is no reason to suppose that the health of the younger brother had been impaired by it.

On Friday, February 26th, he appeared perfectly well, and sat with the other members of the family, engaged in cheerful conversation until after eleven o'clock at night. He had taken his meals with his usual appetite, and of all the social circle there was certainly not one who had the appearance of more perfect health.

At 3 o'clock A. M., on Saturday, he waked in a violent chill, accompanied with a sense of extreme prostration, frontal pain, which grew more and more intense, and aching pains in the back and limbs. He did not vomit, nor had he any stool. He was very restless, and breathed hurriedly. I first visited him at 9 o'clock. His face was pale and his features sunken; the lids nearly covered the eyes; the conjunctivæ were strongly injected;

the pupils were of normal dimensions and equal; the lips slightly bluish, the tongue pale and moist; the skin nearly of a natural temperature but somewhat inelastic under pressure; the abdomen natural in form and sensibility; no eruption existed anywhere upon the skin. The hands and feet were not cool; pulse 85, regular, and of moderate force. The general aspect of the patient was that of a half intoxicated person in pain, and exhausted by it. He turned languidly or abruptly from one side to the other, as one whose sleep is broken by bodily suffering or distressing dreams, and it was noticeable that he more frequently threw his head backward than bent it forward, as persons in the typhoid state of diseases generally do. He answered questions promptly and intelligently, said that he had exruciating pain in the head, and some pain in the back and limbs; then began to moan and to resume his uneasy slumber.

At half-past twelve o'clock I found him sleeping, breathing very rapidly, with a pulse of 120. He seemed unwilling to be aroused; said he had no pain in the head, or elsewhere. The countenance was less pale; the eyes more intensely injected; the skin rather doughy, but neither cool nor hot; no eruption anywhere. No tympanitis. He had vomited after drinking a little wine and water, and had one semi-liquid stool.

At half-past five he had had three liquid stools since the previous visit, and vomited half an hour after taking five grains of carbonate of ammonia, in solution. The jaetitation had been continual, when not interrupted by somnolence. The understanding was clear when once the attention was fixed. Complained of no pain. The pulse remained as frequent as before, but was somewhat feebler. The skin was warmer and softer. The upper and lower limbs, but the former in a much greater degree, and the chest and abdomen slightly, presented numerous purplish spots, varying in size from less than a line to half an inch in diameter. One on the sole of the foot was an inch long. Some were rounded or oval, and others elongated, and others again, were evidently formed by a cluster of spots, and presented a very irregular outline. They were not preceded by any erythematous redness, were not at all elevated, nor did they change their shade of colour under pressure; but every hour they grew darker.

At 9 P. M., every part of the skin was covered with eechymotic spots which were duskier than before. Warmth of surface nearly natural in degree; pulse 160, weaker; no coma, but frequent short periods of sleep, during which the breathing became hurried and laborious; the head was frequently thrown backward, and the body bent in the same direction, but without rigidity. Consciousness and intelligence little if at all impaired.

About 11 o'clock, the agitation became very great, as if from some undefined distress, and was attended with moaning. The breathing grew very rapid, and at times as if embarrassed by an obstacle in the larynx, but there was no rattle or gurgling; the head and shoulders were bent backward; gradually the respiration grew shorter, the pulse could not be felt, the skin was moist with a warm perspiration, and everywhere of a dusky hue; the forearms and hands were almost uniformly purple, and the face turgid; many eechymotic spots on the lower limbs and trunk had attained a diameter of one or two inches, and were almost black. Death took place without any spasmodic phenomena, by rapid although gradual asthenia, precisely at midnight.

Dr. Stillé made some general remarks upon the disease, stating that the history of its several epidemics proves it to have no connection with the war which the nation is now engaged in, as some persons ignorantly suppose;

and also, that all who had observed the disease during the present or in former epidemics agree that it is not contagious. He remarked, further, that the notion of its affiliation with influenza had no further ground than the asthenic diathesis common to the two afflictions, and to all others prevailing simultaneously with them. He also contended that "spotted fever" is an inappropriate designation for a disease in which a majority of the patients present no spots at all, and that it is, in reality, an epidemic cerebro-spinal meningitis of a typhoid type.

1864, April 6. *Cases of Spotted Fever.*—Dr. LEVICK reported the following cases of spotted fever:—

C. R., æt. $5\frac{1}{2}$ years, residing at 324 Julianna Street, a patient of Dr. Fricke, to whom I am indebted for notes of the case, was in ordinarily good health on the 26th of February. At 5 o'clock A. M. of the 27th, he complained of violent pains in the head, back, limbs, and especially about the knees. He had fever, great thirst, and vomited freely after taking anything. Dr. Fricke saw him at about 9 A. M., when his face was rather flushed, pulse 120, pains severe, red spots, not of a bright colour, under the epidermis, principally on the lower extremities and abdomen. Ordered acetate of ammonia. At 10 the child was in a profuse perspiration, very feeble pulse, 144, extreme pain in the head, back, and limbs, with great tenderness of the surface. I saw him with Dr. F. an hour later; the skin was now cold and mottled, pulse scarcely to be counted, and shattered, numerous petechiae on the limbs and abdomen. Dr. Fricke had ordered him carbonate of ammonia gr. j every hour, with milk punch. Carbonate of ammonia gr. ij, alternately with five drops of oil of turpentine, and an enema of two teaspoonfuls of turpentine, were now given him, the punch continued as before, turpentine applications to be made to the surface of the body. At $3\frac{1}{2}$ P. M. the child was rapidly becoming unconscious, pulse 144, the eyes injected. At 8 P. M. semi-conscious, though restless, head much retracted; treatment as before, and three grains of quinine every hour, until nine have been given. 28th, 9 o'clock A. M. The child a little more conscious, pulse 144, very weak, had taken sixteen grains of sulphate of quinia since last visit, in addition to the turpentine and brandy. Dr. Fricke writes: "I may here state that the child took nearly one pint of strong brandy in milk punch, daily, for three and a half days." Treatment continued; the quinine to be given in doses of two grains every three hours. 29th, 9 A. M. Pulse 100, head still retracted, though less so than yesterday, nearly unconscious, but may be roused, grinds his teeth. 7 P. M. More conscious and seemingly better; the spots, which have been pretty freely distributed on the legs, abdomen, and arms, are beginning to fade, excepting those of large diameter. March 1st, 9 A. M. The child is conscious, though grinding his teeth, head still somewhat retracted; treatment continued, and a turpentine enema in the afternoon, and a hot bath at night. 2d, 9 A. M. Pulse 96, had a good night's rest, though at times somewhat delirious; treatment continued. 3d. Pulse 84; child asked for nourishment; movement of head and neck still painful; treatment continued. 5th. Turpentine omitted, as mouth is vesicated, no strangury at any time; continue quinia, five grains daily. 6th—13th. Child took a little mineral acid, and beef-tea, the chief nonnourishment which he has had during his illness. Complaining of severe pain in the head, and having previously suffered from abscess of the ear, warm applications were made to the head and a silk oil-cloth cap applied. This

was followed next day by a copious discharge from the ears to the great relief of the little patient. 13th—19th. Some headache and stiffness of the muscles of the neck continue, has a little diarrhoea, had not slept for two or three nights, and on the 19th took gr. $\frac{1}{8}$ of sulphate of morphia. 20th. Slept well. 21st. The child has taken no medicine during the day for some time, and appears to be convalescent.

After this I ceased to visit the little patient, who steadily improved, regained his entire consciousness, played with his toys, and partook of his food at the family dinner table. The petechiae and all acute symptoms of his disease had disappeared. Quite recently I have seen him with Dr. Fricke, and find him confined to bed again, in a dull, semi-stupid condition, roused with difficulty, without paralysis of either extremity, much emaciated, and presenting much the appearance of tuberculous disease, of which there is no positive evidence, though several members of his family have died of this affection.

Through the kindness of Dr. Fricke, I was called to visit a little child, residing on Callowhill Street near Fifth Street. This little patient, eighteen months old, was perfectly well on retiring to rest on the previous night. At 1 o'clock she awoke and complained bitterly of her head. At 9 A. M. she presented the following appearance: The skin uniformly and finely mottled, of a purple hue, with here and there a few isolated spots of a deeper purple. Eyes slightly ecchymosed, presenting a dull, stupid, and at times an astonished appearance; pulse 60. Carbonate of ammonia given, and the hot bath and turpentine used externally. Child died at 3 P. M. of the same day. The autopsy was most carefully made at 4 P. M. next day, by Dr. Paekard, in the presence of Dr. Fricke, Mr. J. C. Warren, and myself, and presented the appearances enumerated below.

Exterior.—Decomposition of the walls of the abdomen, which are of a green colour. The surface of the body universally mottled; vibices on the knees, petechiae on the legs. *Head*.—On removing the calvaria a large ecchymosis was found under the pericranium near the sagittal suture. The vessels of the dura mater were filled with dark fluid blood, which could readily be pushed aside by the handle of the scalpel. The substance of the brain and of the medulla oblongata was natural in its appearance and consistence. There was no effusion in the ventricles, and the most careful examination failed to detect the slightest evidence of inflammatory exudation. *Abdomen*.—Blood fluid in the mesenteric veins. The intestines were everywhere dotted with minute extravasations of blood, both on their outer and inner surface. Similar ecchymoses were found on the bladder, in the kidneys, and on the diaphragm. *Spleen* healthy, the Malpighian bodies prominent. *Mesenteric glands* enlarged; the solitary glands largely developed, Peyer's glands unaffected. *Thorax*.—Ecchymoses on the diaphragmatic pleura. The lungs contained large quantities of fluid blood. The left ventricle of the heart contained two soft coagula about the size each of a pea. In the right heart the blood was thin and fluid, looking not unlike claret wine. There were no coagula in the right side.

A brother of this child, aged eleven years, was seized at the same time, and under the same circumstances as the case just reported. At 9 A. M. of the 6th ult., the condition presented was much the same as that of the infant, excepting that the petechiae were more distinctly developed. Ammonia, turpentine, internally and externally, were prescribed as before. At 5 P.M. the boy appeared to be moribund, pulse scarcely to be felt, skin cold; patient almost comatose. Although the case was regarded as a hopeless one, it was determined to give three grains of quinia, to be re-

peated every hour until fifteen grains had been taken. At our visit next morning, much to our surprise, not only was our patient alive, but his consciousness restored and pulse almost natural. The quinine in doses of two grains every two hours with oil of turpentine gtt. v, every second hour, and phosphoric acid and brandy were now given. Under this treatment the patient greatly improved, though at times delirious, gave rational responses, and appeared to be convalescent. Great irritability of stomach supervened, rendering it impossible to give him medicines, and on the fourth day of his illness he died apparently of pure exhaustion, having had no paralysis, and retaining his consciousness to the last. In consequence of the great distress of the parents, no autopsy could be obtained.

A brother of this boy was suddenly seized on the second day of his illness with a chill, severe pain in the head and back, with universal aches and soreness of the muscles, leading us to fear that he, too, was suffering from the same disease as that of his brother and little sister. He was at once put on the free use of quinia and brandy, and in a few days was well again, his disease having ended in an attack of angina with some diphtheritic deposit. An older sister at the same time was seized with similar symptoms, and, under similar treatment, her disease terminated, after a few days, in an attack of catarrhal fever.

March 16, 1864, I was called by Dr. Fricke to visit H. S., æt. three years, residing in Rawle Street. He had been entirely well until the preceding evening; during the night he complained of severe headache with nausea, and vomited freely. Dr. F. saw him at 4 P.M. next day, at which time his pulse was 146 and shattered; there was great depression of the system, and the surface was pale. There was slight injection of conjunctiva, and severe pain in the calf of the left leg. At nine o'clock next morning, when I first saw him, his condition was much that already described, the tongue was moist and creamy, there was slight strabismus, and there were several vibices about the knees, and numerous petechiae on the left side of the face near the eye, with a few well-marked petechiae on the leg. There was general soreness of the muscles, especially of the calf. Dr. Fricke had already given him gtt. v ol. terebinth, alternating it with phosphoric acid every hour. Flying sinapisms had been applied to the surface, and an enema of a teaspoonful of oil of turpentine given three times during the afternoon and night. 17th. Head much retracted; pulse 120; had been very restless during the night. One ecchymosis was now noticed beneath the conjunctiva, skin warmer, pupils not affected. Had taken brandy freely; now ordered quinia in grain doses every two hours. 18th. Very restless, grinds his teeth, head strongly retracted, muscles of the neck rigid, pulse 120. Had taken since our last visit four ounces of brandy, four grains of quinine, and turpentine as before. 19th. Spots fading, pulse 120 with some volume; has taken same quantity of quinine and brandy, with beef-tea, as during the preceding twenty-four hours. Had also one-eighth of a grain of morphia at bedtime. Eyes much injected. Thinking him to be over-stimulated, it was ordered that the quantity of brandy administered should be diminished. 20th. Pulse 84, but very weak, his father having failed to give him any brandy; had been very restless during the night until he had taken f³ij sol. sulphate of morphia. Resume the brandy, ordered an enema of turpentine, and three grains of quinine daily. 28th. Pulse 96, no retraction of the head, spots nearly gone. From this time convalescence could be dated, and though there were one or two partial relapses the little patient has since improved, and is now running about again.

It will be noticed that the treatment resorted to in the cases reported, and which appears to have been to some extent successful, was the early exhibition of large doses of sulphate of quinia, brandy, and the oil of turpentine, the latter given by the mouth, the rectum, and applied externally. In addition to this, care was taken to sustain the temperature by the use of artificial heat, in other words, the treatment was an actively stimulating one. In one of the cases referred to, a boy five years old took in one day sixteen grains of quinine and nearly a pint of brandy. But while I believe that our hope of success is to be found in the free exhibition of these remedies, and that we are not to be deterred from their use by the existence of delirium, stupor, or even coma, I do not believe that it is desirable to continue the exhibition of these enormous doses of quinine for any great length of time. Let the system be decidedly affected by the medicine, and after this let the dose be gradually reduced until it be in the quantity usually regarded as that sufficient to keep up a moderately tonic influence. On the other hand, it is well to be aware that there exists a tendency to a recurrence of this disease, not indeed to its full development again, but a tendency to slip back to a typhous condition of system which it is highly important to guard against, and which is best averted by a return for a time to full doses of quinine.

When the subject was under discussion last spring, Drs. H. Hartshorne and Condie called the attention of the College to the close correspondence which exists between "spotted fever" and the epidemic cerebro-spinal meningitis described by the French and Irish writers, an account of which may be found in most of our recent works on the practice of medicine. At the last meeting of the College Dr. Stillé gave us some interesting remarks on the same subject. I do not doubt that the correspondence referred to does exist, nor do I doubt that there may be in many cases of spotted fever, especially when it assumes the chronic form, inflammation of the meninges of the brain and spinal cord, but that this is necessarily present, constitutes the essence of the disease, I do not believe. In scarlet fever we have almost uniformly inflammation of the throat, but no one looks upon scarlatina as mere angina; in measles we have coryza and catarrh, but rubella is not simply inflammation of the air-passages. Still more strikingly there are in typhoid fever inflammation and ulceration of Peyer's glands with suppuration of those of the mesentery, but certainly no one regards this fever as simply meso-enteritis. These are concomitants, frequent concomitants of these diseases, local manifestations of a general constitutional disorder, which may be present or may be absent. So with spotted fever. That this is not simple cerebro-spinal meningitis is proved by the fact that though present in some cases, in others all traces of intracranial inflammation have been absent, and this too when all the other phenomena of the disease have been characteristically developed. Nor are the remedies which have been found most useful in spotted fever those which are recognized as suited to inflammation of the brain or its meninges. The testimony which comes to us from almost every quarter, with astonishing unanimity, is that bloodletting, mercury, and other familiar antiphlogistic measures are utterly inefficient, are indeed worse than useless, while the only medicines, the exhibition of which has been attended with any success, are quinia, brandy, and turpentine, the remedies everywhere recognized as those suited to the typhous state. Tried thus by the therapeutic test the disease fails to hold its position as one of pure inflammation, unless indeed we abandon all our former standards of pathology and of treatment. Hence it is that the name cerebro-spinal meningitis is an objectionable one, as giving erroneous im-

pressions as to the nature of the disease, and as leading to an injudicious and dangerous course of treatment. It would seem preferable, therefore, for the present at least, to adhere to the name of "spotted fever," which, though open to many objections (not the least of which is the danger of thus confounding the disease with maculated typhus), is the name by which it has been known for more than fifty years. For spotted fever is no new disease. The medical literature of the first twenty years of this century, especially that of the New England States, is replete with information respecting it. Accurate descriptions of its symptoms and of its *post-mortem* appearances, corresponding in both these respects with those of the present day, are given by Drs. Miner, Gallup, and many other writers. In fact these physicians appear to have been as familiar with spotted fever as we of the present generation are with typhoid and typhus fevers.

If then this disease be not simple cerebro-spinal meningitis, what is it? I believe it to be, as I have elsewhere expressed it, a malignant febrile disorder, due to a widespread epidemic influence, which acts with intensity on the blood directly, or indirectly through the nervous system. Thus poisoned, the blood is altered in its nature and in its function. Hence follow deranged innervation, impaired nutrition, passive congestions, escape of blood into various tissues, delirium, coma, prostration, and death, the usual results of septicæmia. So far as I can discover, in every autopsy of this disease on record the blood has been found to be fluid, both in the heart and great vessels, or if coagula have been found in the heart they have been small and soft.

More than a year ago, when the account of this disease was first given to the College, I ventured to inquire if the cases thus reported might not be but illustrations of *a malignant form* of the epidemic influenza which was then prevailing in our midst. I was led to make this inquiry by reasoning from analogy, and by noting that the symptoms of spotted fever, as then first given us, were those of influenza greatly exaggerated—if I may so express myself, intensified. I had then seen no cases of this disease, in fact was not aware that such a disorder as spotted fever had ever before prevailed. Observation has since shown me that the two diseases, during the last two years, have uniformly prevailed together in our community, and that in more than one instance, while one member of a family has suffered from the one, other members of it have suffered from the other form of disease. Research has proved that this coexistence has been the case from the earliest times. I believe that there exists an adynamic or typhous epidemic influence extending widely over our country; that this influence, in its mildest manifestation, exhibits itself in the form of influenza or epidemic catarrhal fever, in its most intense degree in the disease known as spotted fever, while between these two extremes are different grades of disease, differing not only in severity, but in their phenomena. I believe that the symptoms vary as the force of the disease is expended, especially on one tissue or organ rather than another; that in one instance we may have simple irritation of the air-passages, as seen in the *epidemic catarrhal fever*; in another the lungs may be especially involved, exhibiting the phenomena of *epidemic typhoid pneumonia*; in another the brain and spinal cord, presenting the symptoms of *cerebro-spinal meningitis*; while in some rarer cases the blood itself appears to be greatly affected, without presenting at once the obvious phenomena of disease of any special organ. I believe that these are all but varied manifestations of one and the same morbid influence, and that the same principles must guide us in the treatment of them all. It is to the constitutional affection, and not to

the mere local disorder, that our remedies must be addressed. It is worse than useless to treat these incidental inflammations as ordinary idiopathic phlegmasiae, and I cannot but believe that our main reliance in the treatment of all these morbid phenomena must be placed in the free exhibition of quinine, brandy, and turpentine.

Spotted Fever.—Dr. D. GILBERT said that he had listened to the reports read and remarks made with great interest. He had seen numerous cases during the last year in consultation, and had three cases in his own practice. He had been called to meet Drs. Service and Wilson, of Schuylkill Falls, when the disease first appeared there in Feb. 1863. He subsequently saw cases with Dr. Wm. Corson, of Norristown, and more recently with Dr. Senderling, of Richmond St., Dr. Cooper, of Arch St., Dr. Knight, of Vine St., in this city, and Dr. Knorr, of Kensington. These cases were all characterized by the symptoms which have been so well described this evening. A large majority of them terminated fatally in from twelve to seventy-two hours after the onset of the disease. Dr. G. stated that cases very similar, and probably identical with this terrible malady, had come under his observation at different periods within the last twenty years. He remembered two cases which occurred in Gettysburg, in the practice of the late Dr. C. N. Bernechy, of that place, in 1844, or thereabout, in both of which there was sudden attack by chill, great depression of the vital powers, with cerebro-spinal complication, stupor, coma, and death, the first in twelve, and the second in sixty hours. Another case occurred about sixteen years ago in this city, in the practice of Dr. Fricke, in the person of an adult male, who died in ten hours after the first symptoms were observed. In this there was a *post-mortem* examination. The most remarkable condition developed was the spotted appearance of all the serous surfaces of the chest and abdomen. About three years ago he was requested to meet Dr. R. J. Levis, of this city, in consultation, in the case of a child aged about five years, in a family in Marshall St. Another child, aged about three years, in the same family, had just died, after some twelve hours' illness, and the case now under treatment was similarly attacked. In both, there was sudden seizure by chill, followed by imperfect reaction, delirium, stupor, sinking, and death. A few days afterwards a child in another branch of the same family, living in the same neighborhood, was attacked, but there was a more perfect reaction after the chill. The disease first seemed to localize itself upon the viscera of the chest, then of the abdomen, and finally on the cerebro-spinal region. The eruption appeared indistinctly on the third day. The general suffering was intense: there was soreness in all parts of the body, and the writhing and irrepressible contortions of the body and limbs were frightful. This case recovered. These cases occurring sporadically, and prior to the late epidemic, could not be classified with any of the commonly known diseases, and were considered by all the medical gentlemen who saw them as rare and anomalous.

Of the cases which Dr. G. had in his own practice since the first outbreak of the epidemic in the suburban districts of this city, the first occurred in March, 1863. The patient, aged about thirty-four years, is an attorney of high position in this city. The attack was characterized by the usual symptoms, the spots appearing on the second day. The delirium was present during the night, and the pain in the head and extremities was intense, without any intermission. In this case, the stupor and coma were not so profound as they are usually met with in the more violent cases. After reaction was fully established, to relieve the cerebro-spinal

distress, twenty leeches were applied to the nape of the neck, which afforded marked relief, and then large doses of sulphate of quinia were given, which were followed by a speedy amelioration of the symptoms. Convalescence was protracted, however, and final and complete recovery did not take place until two months had elapsed.

As the Board of Health was then, through its sanitary committee, investigating the cause and nature of the epidemic at Schuylkill Falls and Frankford, Dr. G. invited Dr. R. La Roche, the chairman of that committee, to see this case with him. Dr. La Roche at once declared it to be a genuine case of spotted fever.

The second case occurred in the person of a clergyman of this city, aged about thirty years. He had a severe chill on the evening of the 27th of Dec. last. In this case numerous spots appeared on the face, body, and extremities, on the second day. Quinine, in full doses, constituted the principal feature of the treatment, and in ten days he was so much better, that it was thought safe to allow some of his friends to see him. The quinine was discontinued, and the elixir cinchona given instead, but the fever returned, and recourse was again had to the quinine with renewed beneficial results. Since then there were two other slight relapses, attributable to over-exertion and exposure, and, as Dr. G. had reason to believe, in part to the omission of the quinine. His convalescence thus interrupted has even now not resulted in the establishment of full health, although more than ten weeks have elapsed since the attack commenced.

The third case, previously a fine healthy boy, aged seven years, was suddenly taken with chill on the morning of the 14th of Feb. ult. at the Mount Vernon Hotel of this city. His mother, an intelligent lady, gave him warm drinks, and made warm applications to his extremities. After reaction and fever, she applied cold to his head, and sinapisms to his feet and nape of neck, and gave him a table-spoonful of syrup of rhubarb. He passed a restless night, but in the morning was more comfortable. Towards the middle of the day he became worse, and at 2 P. M. had a slight attack of convulsions. When this subsided, he appeared to be in a dying state, and then Dr. G. was hastily summoned for the first time. His mother stated to Dr. G. that from the first he complained of intense pain of the head and limbs, that during the night he was delirious, and constantly called for drink. She gave him a second dose of rhubarb during the night, which had operated in the morning once. Dr. G. found him in a state of extreme prostration, the pulse could scarcely be felt, the skin was cold, pupils dilated, and the stupor was so profound that he could be roused with difficulty. There was a livid red spot on the upper lid of the left eye, about three lines in diameter, a larger one on the right cheek near the mouth, and quite a number of the same and smaller size on his buttocks and shoulders, and a few on his back and abdomen. None of these could be made to disappear by pressure. Gave him strong brandy and water in teaspoonful doses every few minutes, until egg-nog could be prepared, which was ordered to be given freely until reaction occurred. As there was great irritability of stomach, sinapisms were applied to the epigastrum, and also to the extremities. Sulphate of quinia in grs. iiiss every half hour was prescribed, first in solution, but being rejected, it was given in the same dose in sugar-coated pills. Saw him again at 6 $\frac{1}{2}$ P. M., and found great improvement. His pulse filled, and about 100 in the minute, his skin warm, and more elastic, his breathing fuller, stupor diminished, and intelligence improved. He had taken freely of the egg-nog, which, as well as the pills, was retained. Ordered the quinine to be continued, giving one pill every hour, and gave

cream and sol. of gum Arabic, instead of the egg-nog. He had two small evacuations from his bowels during the afternoon, produced by the syrup of rhubarb given the evening before. At $9\frac{1}{2}$ o'clock found him very feverish, with increased action of the heart and arteries, jactitation, and delirium. Directed cold to his head, gum Arabic solution only for drink during the night, and to continue the quinine.

16th, 8 A. M. Spent a restless night, drank largely of the solution, and vomited several times. Had taken the pills regularly, but several were rejected after they were taken. Allowing for losses, Dr. G. supposed that at least forty grains of quinine were retained up to this period. Pulse 104; intelligence improved. Ordered elixir cinebona ʒij, tr. opii acet. gtt. xxxij. S. A teaspoonful to be given every four hours. Quinine to be omitted, and nutritious diet to be given. Next day, 17th, his condition was decidedly more unfavourable. Pulse 130, delirium increased, great irritation about the head and face, so that he abraded the cuticle until the blood flowed freely. His head was thrown violently back by the contractions of the posterior cervical muscles, and his pupils were largely dilated. A blister was applied to the nape of the neck, and the quinine resumed in $2\frac{1}{2}$ grain doses every two hours. This was followed by a gradual amelioration of all the symptoms from day to day, until now—sixteen days from the commencement of the attack—he may be said to be convalescent.

Dr. G.'s object, more particularly, in bringing these cases to the notice of the College, which he does merely from memory, is to show that, in his opinion, large doses of quinine have been the chief means in bringing these cases to a favourable termination, thus corroborating the experience of his friend Dr. Levick, as given to the College this evening. In confirmation of the value of stimulation and large doses of quinine he added that, when on a visit to Daveuport, Iowa, last June, he was informed by Dr. J. M. Adler, who, in addition to an extensive general practice, has charge of the military hospitals there, that he had a number of cases of spotted fever during the latter part of last winter, and that he saved nearly all his cases after he adopted this treatment. In one case, that of his hospital steward, he gave 5ss doses every half hour until 5ijj were taken, and although the case when he first saw it was one of the most unpromising he had seen, yet the patient recovered under this treatment. Several months ago, in consultation with Dr. Senderling, of Port Richmond, Dr. G. mentioned this treatment to him, and advised him to adopt it, as the disease was then prevailing there. On a recent occasion, Dr. S. informed him that he had taken the advice, and was convinced that it had been the means of saving several cases. Dr. G. stated that in his cases, whenever the quinine was omitted before the disease was entirely subdued, it returned, and could only be controlled by resuming the use of the quinia. This was particularly shown in his last two cases. In all there were present irritability of the stomach and torpor of the bowels. The spots appeared on the second day, and faded away at the end of the first week. In all there was evidence of more or less grave cerebro-spinal complication, and in no case was there any evidence of the disease spreading from contagion. Leeches in some cases and blisters were useful to nape of neck, but opiates increased the stupor and insensibility.

Dr. STILLÉ referred to a case which he had visited in consultation, and which did not prove fatal until the nineteenth day. In this case, the amelioration of the primary attack and an apparent convalescence appeared to be attributable to the administration of sulphate of quinia in full doses.

REVIEWS.

ART. XII.—*The Principles and Practice of Obstetrics; Illustrated with One Hundred and Fifty-Nine Lithographic Figures from Original Photographs, and with Numerous Woodcuts.* By HUGH L. HODGE, M. D., etc. etc. etc. Philadelphia : Blanchard & Lea, 1864. 4to. pp. 550.

WHEN the intention of the distinguished Professor of Midwifery in the University of Pennsylvania to prepare for publication a work on Obstetrics was first announced, several years ago, from our knowledge of his entire competency for the task, our anticipations as to the faithfulness and ability with which it would be accomplished were in the highest degree favourable, and now, when at length the work has appeared, we are pleased to find that our anticipations in respect to it are in all respects fully realized.

Considering the many able and voluminous treatises on the principles and practice of obstetrics we already possess, and by which the entire subject would seem to have been brought down very completely to the present day, and all that we know in respect to it fully and clearly set forth, it might be supposed that there would scarcely be need or room for another. Neither would there be, if it were simply a question of another work on midwifery compiled from those which had preceded it ; reiterating, in somewhat different form and language, the same doctrines, the same practical directions as those we already possess. The work of Dr. Hodge is not, however, a mere echo of the ideas and instructions of others ; it is to a very great extent an original work. The author has not been content with simply inculcating the opinions and practice of others, however high their standing and authority in the profession, but he has invariably subjected every opinion and practice, from whatever source it emanates, to the test of careful and repeated clinical observation, with a view to detect those, if any, which are false, and further to confirm all of them that are true. His endeavour evidently has been "to ascertain every minute circumstance relating to parturition, to determine, as precisely as possible, the modes of delivery in all normal cases of labour, and to discover what efforts nature makes in abnormal or even impracticable cases, and hence to establish fundamental principles for the guidance of the obstetrician. He has ventured, therefore, to give, without reserve, his own opinions upon all points, and thus he will often be found in opposition to the best and most admired obstetric authorities."

The work of Dr. Hodge is in the highest degree creditable to its author, and confers no trifling honour upon the school whose chair of obstetrics he so long and so ably filled. It cannot fail to become, at least with American practitioners, a standard authority : the author being as much distinguished for his intimate acquaintance with his subject, in all its details ; his long experience and admirable skill in the practice of obstetrics ; his entire accuracy and perfect faithfulness in the report of his experience—in its bearing, especially, upon every unsettled question, whether relating to the science or to the art of midwifery. In his practical directions, while Dr. Hodge

evinces great caution, it is a caution which is widely removed from timidity, which, by hesitating to act promptly in cases where interference is required, prolongs the suffering and jeopards the life of both mother and infant. Having great faith in the ability of the natural powers to effect with safety the birth of the child in the great majority of cases of labour, he nevertheless insists upon the necessity of prompt interference on the part of the accoucheur, with the view of facilitating or accomplishing delivery, by such means as are adapted to the particular circumstances of the case, whenever there shall arise a reasonable doubt as to the possibility of the labour being terminated with safety to the mother and child by the unaided powers of nature.

The present treatise is divided into twenty-seven chapters. The first three are devoted to the anatomy of the pelvis and organs of generation in the female, with the measurements, planes, and axes of the female pelvis, and of the foetal head, in relation to their obstetric bearings. The next two chapters treat of gestation and the symptoms of pregnancy; the next chapter of the management of pregnant women; the next of labour. The ensuing four chapters treat of natural labour, its mechanism, presentations, and management, with the treatment of mother and child after delivery. The subject of the next five chapters is obstetric operations; that of the ensuing ten chapters is dystochia—difficult labour; first, from complications on the part of the foetus—large head, malpresentations, deformities; second, from complications on the part of the mother—deformed pelvis, malposition of uterus, rigidities and irregular contractions, preternatural adhesion of placenta, puerperal convulsions, rupture of uterus, laceration of bladder, abortion and premature labour, uterine hemorrhage, inertia, and inversion of uterus, exhaustion, local and general disease. The subject of the closing chapter is extra-uterine pregnancy.

In the early portion of the treatise the subject of the natural process of labour is treated with great fulness: much attention being devoted especially to the elucidation of the modus operandi of those powers by which the foetus is expelled, and of the varied physical and vital resistances offered to the descent and delivery of the child, in all the presentations and positions which it can possibly assume. This comprehends what is now known as the mechanism of labour. "It is the knowledge of this mechanism, in all its minute details, which can alone furnish correct principles for the guidance of the accoucheur." Hence, the mechanism of labour will be found to occupy considerable space in the present treatise, not merely in reference to presentations of the vertex, to which attention has, for the most part, been, heretofore, too exclusively confined, but in reference to all the varieties of presentations and positions to which the foetus is liable. We believe these minute details to be of the utmost importance. An accurate acquaintance with every point connected with the delivery of the foetus is absolutely necessary to the safe conduct of all cases of labour, but more especially of such as are tedious and difficult.

Dr. Hodge has not been satisfied with simply describing the mechanism of labour, or the proper application of the several obstetric instruments, but by a series of original illustrations has endeavoured to render the whole subject as clear as possible. "He has, in a great measure, abandoned the usual plan of representing the whole child, in relation to the mother's organs, which must necessarily be more or less inaccurate. On the contrary, he has adopted the plan, prevalent in the lecture-room, of exhibiting the foetal cranium in its various relations to the different portions of the pelvis,

in all the modifications of labour. His reasons are, first, the well-known fact that the head forms the great obstacle to easy delivery ; second, it is important to determine the relative size of the head in its different presentations, as compared with the dimensions of the straits and cavity of the pelvis ; and, third, the presentation and position of the head must be ascertained by the sutures and fontanelles, which, when the denuded cranium is presented, become visible, and thus the relative positions of the fontanelles and sutures, as regards the walls of the pelvis, can at once be perceived. Hence, a glance of the eye will reveal what circumference or plane of the head is in correspondence with any plane of the obstetric canal, and also how far the diameters and axes of the head correspond to the diameters and axes of the pelvis."

To insure positive accuracy in all his illustrations, Dr. Hodge has had prepared excellent photographs of the female pelvis and foetal cranium, showing their relative size and position. Those photographs have been carefully transferred to stone, so that the lithographic illustrations by which the present work is accompanied furnish with great exactitude a condensed view of the mechanism of labour, and the position occupied by instruments, in the various presentations of the infant. With a view, also, to obtain a better idea than has hitherto been given of the form, size, and dimensions of the cavity of the pelvis, Dr. Hodge has had plaster-casts of it taken, which casts and various sections of them have been lithographed. These, it is believed, will give to the student of the female pelvis exact and useful information as to its interior, and serve to elucidate many important points in respect to the passage of the head through the pelvis, which had previously been involved in obscurity.

They who shall rise from a careful study of the mechanism of labour as described by Dr. Hodge in the work before us without clear and exact views in regard to it, will scarcely be able to master the subject after the most careful demonstration of it by the most accomplished teacher.

We should be pleased to be able to give to our readers an idea of the manner in which this subject has been handled by Dr. Hodge, and to compare his views in regard to some of the leading questions connected with it—with what may be denominated the physiology of gestation and parturition—with those held by our leading writers upon obstetrics, but this would scarcely be possible without exceeding greatly the ordinary limits of a review.

Dr. Hodge takes, as we believe, the most sensible view of the nature of the nausea and sickness so common during the early period of pregnancy, and sometimes attending it throughout its entire course, by referring it to disturbance of the digestive function from an irritation of the gastric nerves. If congestion or inflammation of the stomach exists in any case, it is always accidental or secondary, and not directly connected with the fact of gestation. This is proved by a series of facts adduced by the author : First, its being relieved by stimulants—by solid food, spices, brandy, etc. Second, narcotics often affording immediate relief, by acting, as they do, chiefly upon the nervous system. Third, its appearing and disappearing with marvellous rapidity, according to the ever varying condition of the cerebro-spinal system : the patient being often relieved by lying down, by a long walk or drive in the open air, by a change of thought or some strong mental excitement. Fourth, its disappearing immediately upon the occurrence of labour at any period of pregnancy, and upon the death of the foetus *in utero*. Fifth, its being aggravated by any unpleasant impres-

sion upon the senses, mind, or feelings of the patient. Sixth, its being increased by antiphlogistic remedies, and by whatever tends to debilitate the woman. Seventh, the analogy of the symptoms to those arising from uterine irritation in non-pregnant females, which appear and disappear according as relief is afforded or withheld from the uterus. Eighth, the occurrence, generally, of a good appetite and digestion the moment the nausea and vomiting cease; there is no slow convalescence, as in recoveries from gastritis—no chronic or permanent injury remains. Ninth, the confirmation *post-mortem* examination affords to this view. In no case has it been shown that ulcerations or organic changes in the stomach were traceable to the sickness connected with pregnancy. Some rare cases, as those quoted by Chomel, Dubois, etc., may seem to be exceptions to this statement, in which, from a long continuance of gastric disturbance, the process of digestion had been so enfeebled, and the various secretions so acrid and irritating, as to excite, in conjunction with the undigested aliment, secondary gastritis and its consequences.

The author sums up his account of what may be termed the physiology of gestation as follows, during pregnancy:—

"1st. The uterus and its appendages are in a state of vital erection—its nervous and vascular systems are excited, and its organic actions increased for the development of the tissues of the parent, and for the sustentation and growth of the fetus.

"2d. In consequence of this uterine excitation, the cerebro-spinal system of nerves is disturbed, sensibility is exalted, so that the mental, moral, and physical condition of the woman is easily excited or depressed—she becomes nervous.

"3d. The general vascular system, the organic life, is also excited. The capillaries become more active; nutrition, secretion, and excretion are augmented. This increased activity of the organic actions is often manifested at the beginning of gestation, gradually augmenting until the full period. When there is much nausea, loss of appetite, indigestion, there are few or no evidences of this activity in the capillary circulation, which is often depressed. When, however, these symptoms vanish, when the appetite and digestion return, the reaction is decided, and the nutritive functions become active.

"4th. There is a natural tendency to general vascular fulness or plethora in all cases of normal gestation resulting from the increased activity of the organic actions, and the greater demand made upon the animal economy for the sustentation, growth, and development of the new being *in utero*.

"5th. This tendency to hyperæmia is usually counteracted by the materials furnished to the fetus by the free secretions and excretions, and, also, in many instances, by the increased development of the mother's tissues.

"6th. Not unfrequently actual plethora does exist, which is often relieved or moderated by an increase of the cutaneous, renal, and other secretions, and also by effusion into the areolar tissue, and occasionally into the serous cavities. In more decided cases it gives rise to hemorrhages upon some of the mucous surfaces, or unfortunately into the cavities of the head, chest, or abdomen.

"7th. In a large majority of cases the watery elements of the blood are in excess, with some diminution of the red corpuscles. In such cases, although the woman is pallid, and often anasarca, her health and strength are good, and her nutritive functions are well executed. The fetus also is well developed, and may be born healthy and strong. This has been termed serous plethora, and, like other varieties of hyperæmia, is often productive of effusions within the cranium, chest, etc.

"8th. The presence of albumen in the urine is no positive indication of nephritis or toxicæmia in the pregnant woman. It is merely the result of renal congestion or of general plethora.

"9th. In a large majority of cases of gestation there is not only plethora, but also an increase of the nutritive elements in the blood, as may be inferred from

the active growth and development of the foetus in utero, and the excellent appetite, digestion, nutrition, health and strength of the mother.

"10th. Many women, from their original or acquired temperament and constitution, from loss of blood, acute or chronic diseases, are truly anaemic and chlorotic, and their blood is impoverished. In such cases there is a diminution of vital power. During pregnancy, therefore, they may require nutritious diet, tonics, and even stimulants, to increase their vital power and the nutritious character of their blood. But even in such cases, there will be, we think, a strong natural tendency to reaction, and also to what is properly termed plethora, that is, an increased quantity of the circulating mass; it is not in this case loaded with nutritious elements, but although deficient in these respects, the watery element is superabundant. Both these tendencies may be productive of mischief, especially by inducing dropsical effusions in the cavities of the body. Although a good diet and tonics may be demanded, yet alteratives, laxatives, diuretics, etc., are indispensable, not to eliminate a poison, but simply to relieve this hydramia or serous plethora.

"The second condition of the circulatory system is *morbid excitement*: this is comparatively seldom inordinate, although there is a constant increase of organic action, and a constant tendency to plethora. This natural excitation and hyperæmia, however, may be productive of mischief, from various causes, arising from the temperaments and constitutions of individuals, from their degree of bodily vigour, and from the unfavourable circumstances in which they may be placed. The common causes of disease, such as exposure to cold, errors of diet, contagious virus, etc., may excite inflammatory or febrile diseases during digestion. Such diseases are often more severe, tedious, and difficult to manage, in consequence of the irritability of the vascular and nervous systems, and the disposition to hyperæmia. More active evacuations are demanded to promote 'resolution,' and to prevent the natural tendencies to congestion, effusion, and inflammation.

"In women who have been brought up delicately, who are 'nervous' or hysterical, especially where there is little disposition to secretion in the skin, kidneys, etc., a febrile state is often engendered by fecundation, without any apparent cause, except the mere fact of uterine excitement, as existing in gestation. Such excitements are generally manifested toward the middle of pregnancy, and are very generally constant, frequently not terminating until after delivery. They simulate the form of nervous or hectic fever, with morning remissions and evening exacerbations."

"There seems to be every grade of this morbid excitement, arising during pregnancy—from mere sensations of heat to forms so severe that patients will be confined to their beds, and excite fears for their ultimate safety. In such instances, however, few or no evidences of plethora are presented, and after delivery, there is a solution of the fever, without ultimate bad consequences. The patient's 'getting-up' is, however, tedious, and very seldom do the mammae furnish any nutriment for the new-born child."

We have indulged in this perhaps unpardonably long quotation from the fifth chapter of the treatise before us, as well on account of the interesting nature of the subject to which it refers, namely, the condition of woman during pregnancy, as from its affording a fair example of the manner in which the author treats on matters introductory to the practice of midwifery. Though but a summary, it is true, of the more developed expositions given by him, it conveys, nevertheless, a very fair idea of Dr. Hodge's views in respect to the physiological and pathological peculiarities of the vascular and nervous systems of the female during gestation. The general correctness of these views will, we think, be recognized by all who have had much experience in obstetrics, and have properly improved the opportunities they have thus enjoyed.

In respect to the proposition of the induction of abortion or premature labour for the arrest of those violent, continued, and exhausting cases of

nausea and vomiting occasionally met with in the pregnant woman, Dr. Hodge gives a very decided dissent, at least in the earlier months of gestation. The doubtful prognosis which must exist in every case as to the final result to the patient, without an operation; the danger of the operation to the mother; the sacrifice of the life of the foetus, especially if the operation is performed in the early months of gestation, render it evident that premature labour can be very rarely justified. Dr. Hodge concedes, however, that after the sixth month of utero-gestation, when the child may be considered as viable, the operation may, perhaps, in some very grave cases, be justifiable; although it is impossible to specify the peculiar combination of symptoms which renders it advisable. He has never met with such a case, nor has he heard of any practitioner of good standing in this city who has been so unfortunate. It is also to be remembered that, in cases of supposed death from nausea and vomiting in pregnant women, a *post-mortem* examination has revealed accidental complications, as peritonitis, inflammation and ulceration of the stomach and bowels, etc. etc., showing that pregnancy was but an accelerating, and not the essential cause of a fatal issue. The existence of such lesions may explain, also, why the operation has been so frequently fatal.

In respect to the unsettled question as to the extreme duration of pregnancy, Dr. Hodge remarks that there are many cases upon record of pregnancy prolonged to the tenth month.

"Most practitioners have met with such cases. A lady of this city, the mother of many children, always insisted she carried them ten months. In one case her friends and physician were perfectly satisfied upon this point—her infant was not born until ten months after the departure of her husband from home. A lady under our own care terminated her menstrual period on the 21st of January, 1843. Early in February she had nausea and other indications of gestation. She was not, however, delivered until the 17th of December, 1843, that is, eleven calendar months, minus four days, equal to three hundred and thirty days after the disappearance of the menses, or forty-seven weeks and one day. It would seem positive, therefore, in this case, that pregnancy lasted at least three hundred and two days, dating from the 18th of February, at the time when the menses should have recurred; but as symptoms of pregnancy existed for some two weeks previously, it is possible, and even probable, that some twenty or twenty-five days might be added, which would extend the time to three hundred and twenty-two, or three hundred and twenty-seven days."

We are well satisfied, from the many apparently well-authenticated facts upon record, and some that have fallen under our own immediate notice, that Dr. Hodge is correct in concluding that human gestation may be prolonged beyond the period of ten lunar months; how long is however a question in respect to which we are altogether in the dark. We believe with him, that in cases of retarded pregnancy, the children will usually be found to be more vigorous and more fully developed.

The examination by Dr. Hodge of the powers or forces concerned in effecting labour is full of instruction. It is marked by the same common sense which distinguishes all his teachings in respect to the vital processes that comprise the entire physiological history of the womb and other genital organs, from the act of impregnation to the final expulsion of the foetus and the return of these organs to their normal state. The author's only aim is evidently to arrive at truth, discarding all novelties—every attempt at explanation which does not flow directly from well established premises. The entire chapter "On Labour," indeed, claims a careful study on the part of all who desire to acquire exact and practical views in relation to the subject.

In the chapter devoted to the management of natural labour, and which, by the way, we would remark, is a model for the fulness, precision, clearness, and accuracy of the instructions it imparts—Dr. Hodge, in common with the best authorities in obstetric practice, directs that the ligation of the umbilical cord should not be practised until respiration and an active capillary circulation have become fully established in the new-born infant. The application of the ligature will then be attended with no bad consequences, even though the pulsation of the cord should still continue.

“Great mischief,” Dr. H. remarks, “often results from the premature tying of the cord, for if the placental function be interrupted before respiration and the pulmonic circulation, which ought to occur at birth, be fully established, congestions of the lungs, heart, and brain, are immediately induced, resulting in partial or complete asphyxia, or even death. Even when the child survives for some time after birth, the phenomena of ‘*morbus cœruleus*’ will exist, and may be succeeded by serous or bloody effusions into the tissues or cavities of the body, and usually by death.”

There is a difference of opinion existing among obstetricians as to the necessity or even the propriety of the ‘binder’ or abdominal bandage being employed after delivery. While some insist upon its early application, so soon as the child is born, and before the placenta is removed, there are others who believe it to be productive of very little, if any good, and when unskillfully put on, as is most commonly the case, positively injurious—that instead of affording regular support to the abdominal parietes, it is more likely to become a ligature around the loins, endangering prolapsus uteri and other mischievous effects.

With Dr. Hodge we should object to the application of the binder previously to the delivery of the placenta, as useless; any good effect it might exert in favouring contraction of the uterus will be much better accomplished by the hand of the accoucheur. It is very evident, however, that, after the removal of the placenta and coagula, “the binder,” when properly applied, becomes all-important. Its advantages when employed at this period are thus summed up by Dr. Hodge:—

“First. It supports the abdominal viscera, the diaphragm, and even the organs of the chest. Hence, it takes away the feeling of emptiness and exhaustion, tending to syncope, which sometimes follows a sudden subsidence of the abdominal tumour. The experience of the surgeon as to the utility of the bandage in the operation of paracentesis abdominis is confirmatory of the above remark.

“Second. The binder facilitates and maintains the tonic contractions of the uterus, and thus prevents a tendency to inertia, hemorrhage, &c.

“Third. It is also beneficial in preventing, by its uniform pressure, any tendency to passive congestions of the abdominal bloodvessels, especially those of the uterus, and thus diminishes the probability of uterine hemorrhage, inflammation, &c.

“Fourth. The pressure from the binder facilitates the gradual contraction of the cutaneous, areolar, and muscular parietes of the abdomen, and if maintained moderately for a few weeks after gestation, it will do much to condense the superficial tissues, and to prevent a pendulous abdomen, which is a source of real inconvenience to many married women, and destroys the symmetry of figure generally so much valued by ladies.”

Passing by the admirable chapter on the treatment of the mother and child after labour, we come to the subject of obstetric operations. The author’s instructions are arranged according as the hand of the accoucheur is alone sufficient, or the aid of instruments is required.

A careful study of the introductory remarks of Dr. Hodge, under the

head of "Operations by the Hands," we would earnestly recommend to the study of every one about to enter upon, or who has but recently commenced, the practice of obstetrics. His rules for version are particularly excellent.

Speaking of cephalic version, or version by the vertex, Dr. Hodge remarks that, for thirty years he has thought that, under certain restrictions, this operation should be resorted to in deviations of the upper part of the foetal ellipse. The chief objections which have been urged against it, are the difficulty of execution, and that, after mutation has been accomplished, no *extractive* effort can be made with the hand. Dr. Hodge has not found version by the vertex to be an operation attended with difficulty, in favourable cases; he considers it to be very generally as practicable as podalic version.

"It is true, however, that if the operation be long delayed, until the uterus is powerfully contracted, and especially until the presenting part has partially escaped from the os uteri, it would be difficult, painful, and often impracticable; but the same is true if version by the feet be attempted under similar circumstances."

In regard to the objection that, in version by the vertex, after the position of the head has been rectified, we can make no traction with the hand to facilitate the delivery of the child, Dr. H. remarks, that it is one of no importance, inasmuch as the operation is performed *simply for mal-presentations*.

"We must come to the conclusion, therefore," he remarks, "that version by the vertex is always desirable, because there is a greater prospect of preserving the life of the child. It can be usually performed as easily as podalic version, and the sufferings and danger of the mother, instead of being aggravated, are lessened, as compared to the operation of turning by the feet. It is also a recommendation that if from any cause, it should be found impossible to bring down the vertex, the practitioner could, without any important loss of time, resort to podalic version.

"The restrictions to which this operation should be subjected are not dubious; it should be confined to mal-presentations of the upper extremity of the foetal ellipse. This includes, therefore, all mal-presentations of the head, such as the forehead, face, &c.; also presentations of the anterior and posterior parts of the neck, and many cases of the shoulder, especially where the arm has been retained within the uterus; although Dr. Wright speaks of his success in returning a descended arm, and then effecting version by the vertex. It should seldom be thought of in presentations of the sides of the trunk, or any of the deviated presentations of the pelvic extremity."

In coming to treat of obstetric operations by the aid of instruments, Dr. Hodge very logically divides instrumental means of delivery into four divisions, viz.: *First*, where the instruments are to be applied to the child in such a manner as to injure neither it nor its mother. *Second*, where the instruments are applied to the child, upon the supposition that its death, if it has not actually occurred, is inevitable, with the view of so reducing its size as to enable delivery to be accomplished. *Third*, where the operation is performed upon the mother, and although very dangerous to both her and the child, it affords, when timely and properly executed, a hope that both will be preserved. *Fourth*, where premature labour is brought on, in cases in which it is previously known that a living child cannot be born at "term." Under the *first* division is included delivery by either the fillet, the blunt-hook, the veetus or lever, or by the forceps; under the *second*, the operation of embryotomy, embryneia, or cephalotomy; and under the *third*, the operations of symphyseotomy, and gastro-hysterotomy; while under the *fourth*, we include the induction of premature labour.

The subject of instrumental interference, whether it be to aid the natural efforts, when these are deficient, so that the life of the child may be saved, and at the same time the period of the mother's sufferings and the danger of injury to her tissues and to her life diminished; or, when delivery is impossible without artificial aid, to accomplish it in such a manner as to prevent the mother from perishing, and, at the same time, when practicable, to save also the life of the child; the whole subject, in a word, is most ably treated by Dr. Hodge. The circumstances which demand and sanction instrumental aid; the mode in which it is to be administered under the particular circumstances and conditions of the several cases in which it may be called for, and the dangers by which each form of it is attended, are laid down at considerable length, and with a clearness and exactness demanded by the importance of the subject, and well adapted to guard the young practitioner, on the one hand, from a rash resort to instrumental aid in cases where the natural powers may be safely trusted to terminate the labour, or, on the other, from such a timidity and delay in respect to its use as to deprive it in a great measure, if not entirely, of its conservative efficacy in respect to either mother or child.

By most of our best modern authorities in obstetrics the forceps are used mainly, if not entirely, as tractors and levers. Dr. Hodge recommends their use also as compressors. In ordinary cases of instrumental labour this compression is very trifling, being carried merely to the extent demanded to fix the blades firmly upon the head of the child, so as to prevent, while acting with the instrument, any motion of the blades upon the scalp; but Dr. Hodge advocates the application of an amount of compression beyond this point, "regulated by the necessities of the case, and the judgment of the operator."

"If," he says, "the head be large or the straits contracted, more pressure becomes requisite; otherwise delivery would be impracticable. How far this compression may be carried with safety to the infant, is a question of great interest; but the solution of it cannot have much influence on our practice, inasmuch as we must be regulated not so much by the idea how much compression can be borne with impunity, but how much is absolutely demanded to accomplish the delivery, for, of course, no more pressure should be made than what is essential for delivery. It is to be remembered, also, that the injury to the child depends much upon the longer or shorter continuance of this compression, and doubtless, also, on the degree of ossification which may exist in the cranial bones. Moreover, every practitioner is familiar with the wonderful fact, that while the placental functions continue, the brain will bear for a long time great pressure with impunity.

"We know that owing to the moulding of the head by the passages of the pelvis, and the powerful contractions of the uterus, the head may be greatly diminished laterally, and increased in length by the yielding and overlapping of the bones, in many instances, without destroying life, and we know, also, that in many cases where such compression has existed, forceps have effected a delivery, and the child been preserved. In one case of contracted pelvis, where the sacro-pubic diameter measured but little if any more than three inches, the author delivered an infant alive, whose head, a few hours after delivery, measured three inches and ten lines, in transverse diameter. We think, therefore, that the limit to be prescribed to the use of the forceps as compressors must be restrained by the necessities of the ease, rather than by the effect it may have upon the life of the infant; for though that practitioner must be regarded as careless and even criminal who makes more compression than is absolutely necessary, yet he is fully justified in making that degree of compression requisite to effect delivery provided there be any reasonable expectation of preserving the life of the child.

"Although, therefore, the child must, in many instances, be exposed to some

danger from the use of the forceps as compressors, yet they afford as fair prospect for its safety in bad cases, where otherwise it must have perished, and in most instances, they are all important to diminish the sufferings and danger of the parent, with little or no risk to the infant."

The illustrated descriptions of the various obstetrical instruments given by Dr. Hodge are particularly interesting, while his remarks upon the excellencies and defects of the different forms and constructions which have been suggested for each of them, will be found a valuable guide to the young practitioner when furnishing his armamentarium *obstetricum*.

Dr. Hodge is not in favour of the operation of symphyseotomy; inasmuch as by it but a very trifling addition to the cavity of the pelvis is obtained; while, after its performance, the delivery must always be artificial. The stretching or even laceration of the pelvic tissues in the neighbourhood of the symphysis pubis, caused by the division of the latter, endangers the occurrence of more or less extensive inflammation, followed by suppuration and the formation of abscesses, and of fistulae of long continuance; and as reunion of the symphysis is a rare occurrence, impairing the patient's power of locomotion, without reference being made to the injuries which may be sustained by the bladder and urethra, it is, therefore, very evident that symphyseotomy, while it promises very little for the child, and endangers the comfort, if not the life of the mother, must be discarded from among the legitimate operations of obstetric practice.

In respect to the all-important question of the propriety of "the Caesarean section," based, of course, upon the danger incurred by the mother and child in its performance, Dr. Hodge, after regretting the insufficiency of the statistics in our possession by which to estimate with any approach to accuracy the degree of this danger, and whether it be modified to any great degree by the period of labour at which the operation is performed, remarks as follows:—

"Theoretically much might be said in favour of the operation. Notwithstanding the dangers necessarily incident to gastrotomy, we know that it has been frequently performed with success, not merely in cases of hernia, but more especially for the removal of ovarian or other tumours from the cavity of the abdomen. Patients, also, have often recovered from punctured, incised or even gunshot wounds, interesting the cavity of the peritoneum, and, in many instances, have survived universal peritonitis, whether arising spontaneously, or resulting from accidents. And, finally, the undoubted recoveries of many patients, after the Caesarean section, all combine to prove that the operation is justifiable in cases otherwise desperate.

"The hope, also, may be entertained, that if the patient be in a good condition, mentally and physically, and if the deformity of the pelvis be ascertained previous to the occurrence of labour, so that suitable preparations can be made for the operation, gastro-hysterotomy will prove far more successful than in times past, and, perhaps, may be justified even in cases of moderate deformity, when the child is active, for the purpose of preserving its life, as well as that of its mother. Let it be remembered, however, that in the present state of our knowledge, the practical rule, as laid down by English obstetricians and confirmed by the high opinion of Cazeaux, *injustifies* the operation only when the conjugate diameter is below two and a quarter inches, whether the child be alive or dead."

Turning to the discussion by our author of the question as to the propriety of the induction of premature labour in cases in which it is known that a live child cannot be born at the full term by the natural powers, and as to the degree of safety it affords to both mother and child compared with the other means of delivery that have been suggested under the same circumstances, we find that he is an advocate for procuring the expulsion of the

infant at as late a period of gestation as will insure its viability, if it be still alive, and yet sufficiently early to prevent its head having acquired a size that will prevent its passage through the pelvis of the mother. The objections to the operation have gradually been abandoned, and, although the operation is still less favoured by the Continental than by the English authorities, it receives the countenance of the best practitioners; and "statistics in all parts of the world are confirming the propriety of the practice in suitable cases."

"At the present day," Dr. Hodge remarks, "it seems wonderful that any question as to its morality should have been discussed. The question is not whether the practitioner was to determine the life or death of the child in utero, where the mother's pelvis is deformed, but what were the best means of delivering her and the child from existing danger; in other words, whether the parent and her infant would be safer by the induction of premature labour, or by resorting to gastro-hysterotomy, symphyseotomy, or embryotomy. This reduces the question to one of ordinary medical or surgical consultation, where the welfare of the patient is involved in the decision of the practitioner. It is a choice of evils, and the obstetrician is in duty bound to choose the least for his patient. This is not a question, therefore, of morality, any more than any other question presented for professional decision. It is one for the exercise of a sound discretion under a full knowledge of all the circumstances involved, and of the existing danger to the parent and her child; and, certainly, the decision in favour of the induction of premature labour in cases to which it is suited must be readily and cheerfully rendered. We have no doubt that the British obstetrician has by it conferred a substantial benefit on man, and that thousands of lives of infants and their mothers will, by its means, be preserved."

The foregoing remarks apply strictly to those cases in which the induction of premature labour may be demanded from the impediment offered to the delivery at term of a live child; there are, however, other cases, such as when there is a tendency to a large size and perfect ossification of head in the infant; when there is a diseased or disorganized placenta; where there is a dead child in utero; where there exists irreducible retroversion of the uterus, or uterine hemorrhage, or placenta praevia; where the mother's health is so impaired as to jeopardize her life should labour be deferred to the full term; when there is intense, persistent, and exhausting nausea and vomiting, and where puerperal convulsions have occurred in former labours, or are threatened, in all of which cases a resort to the induction of premature labour has been proposed in order to insure the safety of the mother. The propriety of the proposition is considered by Dr. Hodge at some length—the reasons for and against it are carefully weighed, and a conclusion adverse to its adoption in the greater number of the cases referred to, arrived at. The entire teachings of the author on the subject of the induction of premature labour are particularly sound and instructive. His remarks on the abuse of the operation also are replete with sound sense, while his general conclusion that, in the present state of our knowledge, to procure abortion is perfectly justifiable in cases of great deformity, to secure the important life of the parent, is a position fully borne out by the leading authorities of Great Britain and the continent of Europe.

The ensuing ten chapters treat of the several forms of dystochia, whether the complication of the labour is referable to the foetus or to the mother. The whole of these chapters exhibit the same clearness and accuracy of description, and the same definiteness and soundness of instruction as distinguish every other portion of the work, while the whole subject is most

copiously illustrated by admirable lithographic plates from original photographs.

In the chapter (21st) on dystochia from rigidity and irregular contractions of the female organs, will be found the views and experience of Dr. Hodge, in respect to the propriety of the induction of anaesthesia by ether or chloroform during labour, and the conditions under which it may become proper. A very neat summary of the present state of our knowledge upon the subject is presented, drawn up with the utmost candour and characterized by the same common sense reasoning, from the facts which have been accumulated in reference to it by the best authorities, which characterizes all Dr. Hodge's expositions of the several unsettled or controverted questions in the practice of midwifery. His general conclusion as to the question of anaesthesia in labour is thus expressed :—

" After a candid examination of various facts and arguments presented by scientific and experienced accoucheurs," the author believes, " that anaesthesia, as a general rule, should not be employed in *normal labours*, but be reserved for complications more or less serious, including many depending upon the mental and normal as well as the physical condition of the parturient woman."

The highly important subject of puerperal convulsions is very fully discussed in Chapter 22d. Dr. Hodge believes that although closely allied to other convulsive affections to which women are liable at different periods of their existence, puerperal convulsions are of an essentially different type, peculiar in their symptoms and history, and demand important modifications in treatment. The great and leading predisposing cause of puerperal convulsions is, according to Dr. Hodge, the increased excitability of the nervous system generated by pregnancy; plethora, or the excited condition of the bloodvessels so common during gestation, is also set down as another very important exciting cause of these convulsions. Local congestion is very liable to ensue in the state of plethora incident to gestation, which still further aggravates the nervous irritation, interferes with the functions of the organ in which it is seated, and may be followed by watery or bloody effusion. Should, therefore, the brain be the seat of irritation from a moral cause followed by congestion, and especially by sanguineous effusions, the cerebral functions will be deranged, as manifested by pain, delirium, convulsions, coma, and it may be by death.

Dr. Hodge denies that puerperal convulsions are connected with granular nephritis, and a consequent vitiated state of the blood. He contends that the albuminuria, which so often coexists with puerperal convulsions, is indicative of congestion of the renal vessels, or of general plethora, and has no necessary connection with toxicohaemia in any of its supposed forms.

The exciting causes of puerperal convulsions are very numerous; among them may be enumerated powerful mental or moral impressions, changes of temperature, especially from heat to cold, irritations of the stomach and bowels, from undigested food, aerid ingesta, bile, accumulation of febrile matter or gas, bile, etc., severe attacks of gastrodynia, colic, neuralgia, severe falls, blows, etc.

" During labour, convulsions are often produced or aggravated by the severity of the pains arising from the contractions of the uterus, or from obstetric operations. They may also be caused by the pressure of the child upon the os uteri, but more frequently from pressure of the child upon the obturator and sacro-sciatic nerves, and upon the sensitive tissues of the perineum and vagina. The bearing-down efforts must be also regarded as a common and efficient exciting or aggravating cause."

By almost every writer on puerperal convulsions the presence of the child in utero has been arranged among the most important of their exciting causes ; by a few this would seem to be considered as their chief if not their cause. This Dr. Hodge very properly sets down as an error, which has been productive of much mischief. He considers it, however, as most certainly a predisposing cause.

"Hence," he remarks, "so long as it lives in the womb, the predisposition to convulsions may be augmented, but on its death or delivery the symptoms of nervous and vascular excitement diminish and disappear. There is no evidence that the foetus *per se* excites spasms or convulsions. So long, therefore, as uterine pain and the bearing-down efforts are absent, no excitation is caused by the continued presence of the child in utero."

The indications of cure in cases of puerperal convulsions are, according to our author, *first*, to diminish or remove the plethora or congestions ; and *second*, to quiet the cerebro-spinal irritation.

To fulfil the first he depends upon prompt and copious venesection, followed by cups or leeches to the head ; stimulating enemata, to empty the intestines, promote the secretions, and act as revulsives ; with the same intent purgatives are to be administered whenever there is an opportunity. To quiet the cerebro-spinal irritation, Dr. Hodge directs the removal of the cause of nervous irritation, whether it be congestion, gastric or intestinal irritation, distended bladder, or uterine irritation, including labour, and all its attendant circumstances. In respect to the question, If convulsions occur during gestation, should premature labour be induced ? Dr. Hodge presents a decided negative. To attempt it would in his estimation be a means of augmenting instead of relieving the convulsive paroxysms. During the first stage of labour, also, an attempt to deliver is prohibited.

"All the usual treatment," says Dr. Hodge, "should be diligently employed, but no artificial delivery should be attempted. Relaxation and dilatation of the os uteri should be facilitated by means of the lancet, by warm mucilaginous injections into the vagina, and occasionally by belladonna ointment, and in a few instances, by the employment of opiates and anaesthetics."

During the second stage of labour, however, artificial delivery becomes, according to our author, with few exceptions, the duty of the practitioner.

"The mode of accomplishing delivery must be accommodated to the circumstances of the case. In all *vertex* presentations the forceps should be employed not merely when the head is at the inferior strait, or in the cavity of the pelvis, but when it is at the superior strait. The os being dilated and the membranes ruptured it is difficult to conceive any serious objection to the forceps when the vertex presents, even when it is at the brim of the pelvis. Little or no pain is excited by their application, and the subsequent sufferings are simply those necessarily attendant on the descent and pressure of the child. If there be any malpresentation of the head, it should be corrected according to prescribed rules, and then the forceps may be applied."

Version, which has been recommended when the head is high up, as a substitute for the forceps, Dr. Hodge considers as far more painful and dangerous for both mother and infant ; he would restrict it, therefore, to a few rare cases of trunk presentations.

In respect to *craniotomy*, which has been recommended by some authorities, Dr. Hodge remarks that, in ordinary cases, nothing is to be gained by it ; the forceps are fully adequate for the mother's welfare, and may prove equally advantageous for that of the infant. Craniotomy, therefore, is to be restricted to cases of deformity of pelvis or child, and perhaps to a few instances where the child is dead.

"In pelvic presentations," Dr. Hodge remarks, "delivery should be facilitated by the blunt hook or fillet, and afterwards by the hands or forceps, according to the various circumstances attending such presentations."

Opium, which was among the remedial agents considered at one time the best adapted to cases of puerperal convulsions, after having for a time been discarded because believed to be calculated to do more harm than good, is becoming to be again very generally employed as an important adjuvant to direct depletion. Dr. Hodge remarks that

"When the bleeding has been carried as far as may be prudent, and there is still a tendency to convulsions, or to mental or nervous excitements, a full dose of opium has proved very advantageons in quieting the symptoms of nervous irritation, and preventing the reflex influences of uterine contractions, &c., upon the spinal marrow and brain. In hysterical or milder forms of convulsions, little depletion may be necessary before its exhibition, but where there is much sterorous respiration and great coma, the employment of opium should be long postponed." "In doubtful cases, preparations of camphor, hyoscyamus, and lactucarium may be occasionally substituted. It is often preferable to administer these analgesics per rectum, that they may more decidedly influence the uterine and pelvic irritations. Belladonna ointment applied to the os uteri is strongly recommended, to diminish its sensitiveness, and promote dilatation."

Anæsthesia is recommended by Dr. Hodge under the same circumstances in which opium may be safely administered. He thinks, however, that it should be restricted to purely hysterical cases, or to those in which much nervous excitement, general or local, remains after congestion of important viscera has been relieved: it is prohibited where there are organic affections of the brain, heart, or lungs.

"Under ordinary circumstances, after depletion, anæsthetics," says Dr. Hodge, "quiet mental or moral excitement, moderate or relieve the convulsions, and often prevent a return of the paroxysms. Anæsthesia also favours the relaxation of the os uteri and vagina, thus facilitating the progress of labour, and will enable the patient to endure operations which might otherwise prove fatal. When, however, there is congestion or great coma, its administration is contraindicated."

Dr. Hodge concludes his very complete and admirable account of the treatment of puerperal convulsions with the following remarks, the correctness of which is fully borne out by ample statistics:—

"Such is a summary of the treatment which experience has, at the present time, proved most efficient in puerperal convulsions. Its success has been comparatively very great, the mortality being diminished nearly fifty per cent.; and when the principles which should regulate the practitioner are better understood and judiciously carried out, more favourable results may be anticipated for mother and child."

There follow some remarks on the convalescence from this formidable affection, and some pertinent suggestions in regard to its prevention.

The entire section of Chapter 22d, devoted to the subject of puerperal convulsions, deserves to be carefully studied by every obstetrician. The history of the disease, its causes, pathology, management, and prophylaxis are treated by Dr. Hodge in a most masterly manner, and the conclusions at which he arrives in reference to each seem to us to be in accordance with the results of all recent experience, when carefully analyzed and tested by reliable statistics.

The next complication of labour treated of by our author is rupture of the uterus. In the treatment of this terrible and often fatal accident the general principle should always be acted upon, "that the prompt removal

of the child contributes to the safety of the parent." We are happy to find that Dr. Hodge is an advocate for gastrotomy in all cases in which the child cannot be readily delivered by instruments or the hand. In the latter periods of gestation he considers, indeed, that delivery by the natural passages should never be attempted, but the child and its appendages should be extracted by the Cesarean section. The relative advantages of gastrotomy, compared with other modes of delivery, are shown by the statistics furnished by Dr. Trask; from which it appears that of two hundred and seven cases in which gastrotomy was performed twenty-two recovered, and seven, or 24 per cent. were lost, while in those in which version, the forceps, perforation, etc., were employed, thirty-eight recovered, and eighty, or 68 per cent. were lost.

In the chapter on abortion and premature labour, Dr. Hodge, referring to the well-known fact that many women are liable, in successive pregnancies, to abort at the second or third month, the occurrence of which periodic abortions has been referred to "a morbid habit," remarks that, after a careful attention to these cases, he is persuaded that habit has very little to do with their production. He believes that in a large majority of cases they are dependent upon retroversion of the uterus, and that the tendency to abortion may be prevented by correcting the displacement before, or even after fecundation has taken place. He cannot agree with M. Velpeau in referring the greater number of these early abortions to a diseased condition of the ovum. It seems to him very improbable that a woman should habitually abort from a diseased ovum when the health of herself and husband is good, more especially as his clinical experience has taught him that "the habit" may be destroyed, very generally, by suitable treatment. In cases where the ovum had perished a miscarriage could not be prevented.

In cases of accidental hemorrhage during pregnancy, to arrest the flow of blood and the consequent exhaustion of the patient, Dr. Hodge is in favour of the use of the "tampon" or "plug," and for the following reasons:—

"1st. Because occult hemorrhage is a very rare accident, under any circumstances, and especially after the use of the tampon made of small pieces of sponge, where the fluids are allowed to escape, and yet coagulation of the blood is facilitated.

"2d. Because no occult hemorrhage can occur unless the uterus yields, as the ovum, when entire, is incompressible. The yield of the tissues of the uterus seldom occurs, as the pressure from the effused blood very universally stimulates the uterine fibres to contract, forcing the blood to the orifice of the uterus.

"3d. The tampon is very effectual in arresting hemorrhage, unless it be profuse, and in such cases it moderates the discharge, so that time is gained until the os uteri is dilatable.

"4th. Should it succeed, the life of the child, as well as that of the parent, is usually secured.

"5th. On the contrary, if the membranes be punctured, the child, even if the hemorrhage be arrested, is in the greatest danger from its immaturity and the compression to which it and the placenta are subjected before delivery can be accomplished.

"6th. If, after the rupture, the hemorrhage should continue, the danger to the mother, as well as to the child, is most imminent, as, under the circumstances, the ordinary remedies for arresting hemorrhage are very inefficient, and almost the only chance left for the unfortunate mother is 'forced delivery,' which all acknowledge to be fraught with the greatest peril, especially as the patient is already weakened from loss of blood."

Dr. Hodge's treatment of placenta praevia is, perfect rest of the patient in bed, hips elevated, head low; a simple, easily digested, and unstimulat-

ing diet; cold applications to the uterine region, and warm to the extremities; avoidance of all mental and moral excitement.

"The nature of the hemorrhage being ascertained, a soft sponge, dipped in cold water and vinegar, should be applied directly over the orifice of the uterus, and supported by other portions introduced between it and the floor of the pelvis, or, perhaps, by a gum-elastic bag distended with water. If the hemorrhage should continue and the os remain rigid, the employment of the sponge tent or the internal caoutchouc dilator may possibly be advantageous before more decided ulterior treatment is employed. If, however, the hemorrhage be, by these means, diminished, and the patient's strength is good, the practitioner should wait until the os uteri be dilatable. Then, if the membranes do not rupture, they should be perforated, and the liquor amnii evacuated. If the contractions of the uterus be not powerful, the ergot should be given in repeated doses, while cold applications should be made to the uterus and rectum. If now the bearing-down efforts be efficient, and the perineum becomes distended, the tampon may be gradually removed, and, if necessary, the forceps applied to complete delivery. If the head be too large, or the pelvis small, perforation of the cranium may, in some rare instances, be demanded.

"If, unfortunately, these measures do not sufficiently diminish the hemorrhage, and the patient's strength fails, and the labour cannot be rapidly completed, a still further hope remains by at once extracting the whole placenta, either by means of the hand, or some suitable instrument, so that, if possible, the hemorrhage may be arrested and time gained for the patient's system to react, that delivery may be subsequently effected.

"If it should be ascertained that the presentation is preternatural, the membranes ought not to be ruptured until the os uteri is dilatable, so that version may be accomplished with less difficulty. In such cases also, unless the necessity be imperative, the artificial abstraction of the placenta should be avoided, as the subsequent operation of version would be more painful and dangerous."

To form a correct estimate of the mode of managing *placenta prævia*, a summary of which we have just given, it will be necessary to examine carefully its rationale as laid down by our author, together with the reasons adduced by him in proof of its superiority over the several exclusive plans of treatment which have been proposed by leading obstetricians. The space occupied by the discussion is such, however, as to prevent us from attempting to present even a bare outline of it to our readers. To such of them as are interested in obstetrical practice we recommend a careful study of the entire account given by Dr. Hodge, in the 24th chapter of his treatise, of the cause, phenomena, progress, and management of unavoidable hemorrhage.

We must pass over the chapter on inertia and inversion of the uterus without any other special notice than to indicate the remarks of Dr. Hodge in respect to the employment of ergot as an oxytocic. He condemns the use of the article unless there is satisfactory evidence of the absence of all mechanical impediment to the passage of the child, in the first stage of labour, in primiparous women, in cases of mal-presentation or position, of rigidity of the os uteri, vagina, or perineum, or of disproportion between the head of the child and the passages of the pelvis. On the contrary, he remarks:—

"If the os uteri be perfectly dilated, the membranes ruptured, the presentation favourable, and if relaxation of the perineum has occurred, there can be no reasonable objection, in most cases, to the administration of this specific. In this city, after the publication of Dr. Stearn's letter calling attention to the oxytocic properties of the article, it was very generally employed by the profession, under the sanction and example of both Drs. James and Dewees, for many years. From its mischievous influences, however, its reputation has gradually declined, and it is now comparatively seldom exhibited during the second stage of labour. Dr. Meigs says he never gives it for its expulsive power; and

we must coincide with him in the declaration that the forceps are preferable for this purpose."

Chapter 26 treats of labour complicated with various local and general diseases of the mother, while the 27th and closing chapter is devoted to a consideration of extra-uterine pregnancy. Both chapters exhibit the same careful but explicit teachings which are characteristic of the treatise throughout. The author's remarks upon the several plans proposed for the treatment of cases of extra-uterine pregnancy are particularly interesting; and although, from the very nature of the accident, and the obscurity of the diagnosis, in the early stages invariably, and in very many instances throughout the entire case, nothing positive in regard to treatment can be laid down, yet to be able to determine what should not be done, is, it must be admitted, in such cases all important, inasmuch as the safety of the patient and the reputation of the practitioner may depend on it.

We have endeavoured, in the foregoing notice of the work of Dr. Hodge, to exhibit to our readers its general excellence, and the ability with which the author has treated some of the leading questions in midwifery. We do not pretend to have pointed out all that is sound in the matter and commendable in the manner of his teachings, but only so much as to recommend the work to the favourable notice of the profession. It constitutes, very certainly, one of the fullest and most complete treatises on the principles and practice of obstetrics that has yet appeared in either Europe or America; and we may safely add, the most reliable. On whatever question in midwifery the practitioner may consult it, he will find always the needed information, and may repose the fullest confidence in following it that he will not be led into grievous error.

D. F. C.

ART. XIII.—*Outlines of the Chief Camp Diseases of the United States Armies as observed during the present War. A Practical Contribution to Military Medicine.* By JOSEPH JANVIER WOODWARD, M. D., Assistant Surgeon U. S. A.; Member of Acad. of Nat. Sciences of Phila.; of the Pathological Society of Phila., &c. &c. Philada.: J. B. Lippincott & Co., 1863. 8vo. pp. 364.

WHILE engaged in collecting materials for an authorized and elaborate medical history of the war, Dr. Woodward has embodied in this volume an important instalment of its results and lessons. Although his own observations on the field, with the Army of the Potomac, in the military hospitals at Washington, and in the Army Medical Museum, have afforded the principal basis for his conclusions, yet the uncommon opportunities belonging to his connection with the Surgeon-General's office must give a higher authority to his book than would otherwise attach to it. Avowing, in his preface, the present incompleteness of his investigations, he trusts that they may prove useful, even if fragmentary, to his brother medical officers. There is no doubt that he is fully justified in this anticipation. Even if the diseases of the army during this war had been merely a repetition of those known already in the armies of Europe, their closer study would be of great importance. But, while there are many elements

of similarity, there are also some very peculiar features in the disorders which have affected our soldiers in that border region which has been the principal seat of war. Among these features we may notice, at the outset, the almost total absence of uncomplicated typhus, "the scourge of the armies" of the Old World, and the frequent presence of a threefold malady, engendered by the conjoined influences of crowd-poison, autumnal malaria, and scurvy. The camp-fevers of the army of the United States have been, and are, as Dr. Woodward avers, upon statistical proof, far less fatal than those of Europe; but a well-marked adynamic tendency in all diseases affecting the troops has been a prominent fact, the full recognition of which is necessary to the comprehension of their history.

Besides the typho-malarial fever, this tendency is shown in the serious character of epidemic camp-measles; in prostrating catarrhal affections; and especially in the exhausting diarrhoeas and dysenteries which have constituted more than one-fourth of all the diseases of the army. Neither have idiopathic phlegmasiae and traumatic affections escaped the same depressing influence, as is shown by a larger proportionate mortality than in civil life, and also by intolerance of bloodletting, antimonials, mercurials, and low diet. These therapeutic agents have seemed to be so ill borne that, to use the language of our author, "the majority even of the warmest adherents of such remedies have usually, after some experience, grown exceedingly cautious in their administration, or abandoned them altogether."

Zymotic diseases are almost exclusively considered by Dr. Woodward, as they have produced two-thirds of the disease occurring among our forces; and they are, perhaps, most amenable to measures of prevention when their causes are understood. The word zymotic is held to be not etymologically justifiable, as no true fermentation occurs in the morbid processes thus denoted; but, as a convenient adjective, it may still be retained. We would hold that it is more than convenient, as the *analogy* between the action of morbid poisons (whether only affecting the blood or not), and that of ferments, has not been disproved. It is true that, in the classification of the British Army (presented to the Statistical Congress in 1855, by Dr. Farr), and of the Registrar-General's office, parasitic diseases are inconsistently placed among the zymotic. In the forms prepared for the U. S. Army, at Dr. Woodward's suggestion, *parasitici* are removed, to constitute a separate class. In those statistical forms, miasmatic, enthetic, and dietetic disorders are comprised together as zymotic. We can only question the propriety of the inclusion of the last of these, under which we find "starvation," named first on the list. In what sense, or by what convenience, can this be called zymotic? Miasmatic diseases are understood by our author to be all those due either to telluric sources (*koino-miasmata*), or to those produced by decomposition of matters derived from the human body (*idio-miasmata*). This is the signification connected with the term miasm as employed by most British writers, although it has been more narrowly restricted in this country, owing especially to the preference and extended influence of Prof. Wood. It is, plainly, very much a matter of choice; but, perhaps, it will be best to follow the Italians in applying the word *malaria* to the local emanations which cause autumnal fevers, and to allow *miasma* to embrace all sorts of atmospheric pollution. The list of miasmatic diseases cited by Dr. Woodward enumerates the following: typhoid fever, typhus fever, typho-malarial fever, yellow fever, remittent fever, intermittent fever, diarrhoea, dysentery, epidemic cholera, erysipelas, hospital gangrene, pyæmia, smallpox, varioloid, measles, scarlet fever,

diphtheria, mumps, epidemic catarrh. Rheumatism is added to these in the British tables, it is difficult to perceive for what reason.

Enthetic diseases, in the U. S. Army tables, are as follows: syphilis, gonorrhœa, gonorrhœal orchitis, stricture of the urethra, purulent ophthalmia, hydrophobia, glanders, bite of serpents, &c. Of all venereal affections together, one soldier in twelve was the subject, according to the statistics of our army, for the first year of the war. In Great Britain, nearly one-half of the whole number of troops serving in the kingdom were admitted for venereal disease into hospitals in 1859.

Dietic diseases are stated thus: starvation, scurvy, purpura, delirium tremens, inebriation, chronic alcoholism, &c. Of the various effects of the excessive use of alcohol, 1634 cases are reported as having occurred in our army in the one year for which returns have been made, in an annual mean strength of 281,177 men.

An analysis of the statistics of the sickness and mortality of the United States Army for the year ending June 30, 1862, shows that while the proportionate number taken sick has not very greatly increased, the mortality rate is double that of the old regular army, in time of peace, during eighteen previous years. The amount of disease and rates of mortality vary considerably in the different geographical regions, as previously shown in Dr. Woodward's pamphlet, entitled "Sickness and Mortality of the Army during the first year of the War." The Pacific coast, New Mexico, and the Department of the Northwest are far healthier than the Atlantic coast, and this again is far healthier than the valley of the Mississippi.

Dr. Woodward treats of the conditions determining the character of camp diseases under the three captions of *malarial influence*, *crowd-poisoning*, and *scorbutic taint*. These three wide-spread and powerful influences underlie the majority of camp diseases in America, as they represent the effects on man of climate, mode of life, and food.

The natural expectation that the exposure of most of the troops of the United States armies to new climatic conditions would produce a large amount of disease, has, happily, been realized only to a limited extent. Yellow fever has not attacked our forces, except on a very small scale at Key West, Florida, and Hilton Head, South Carolina; and autumnal fevers have been rendered comparatively innoxious by the liberal administration of quinia, notwithstanding the occurrence of a great number of cases. The influence of malaria, however, is not to be estimated merely by the number of instances of intermittent, remittent, and pernicious fever; it has been almost equally important in complicating affections of a different kind. Dr. Woodward's remarks upon the general subject of malaria are judicious and concise.

As produced by crowd-poisoning, he mentions in the following section, typhoid fever, typhus, and oriental plague; constituting a group, of which typhoid fever is the mildest, and plague the most severe. The inclusion of typhoid fever in this etiological association cannot be, as yet, accepted without question. Even Murchison supposes a more especial relation of the true crowd-poison to typhus; and the facts in civil practice, in this country, do not appear to us to sustain any such relation in regard to typhoid fever at all.¹ The time has hardly arrived for asserting, or at

¹ Dr. Christison has lately denied the dependence of typhoid fever upon crowd-poison, so far as experience in Edinburgh bears on the question.—*Address on Public Health, Trans. of Social Science Assoc.*, 1863.

least for demonstrating, the mode of causation of this disease. The only argument in favour of its being *miasmatic* in origin (in the most extended sense) is its likeness to typhus; and this, to the large majority of medical observers who recognize their non-identity, is certainly not decisive. On this point, the clinical experience of our field and general army hospitals has, it must be admitted, not contributed much toward the adjudication of our doubt; it has been rather synthetic than analytic in its facilities.

Dr. Woodward's conviction of the non-existence of typhus in our armies, and of the production in them of typhoid fever under conditions of crowding such as have engendered typhus elsewhere, appears to be in part, if not principally, founded upon pathologico-anatomical considerations. The presence of the characteristic intestinal lesions of typhoid fever, following also diarrhoea during life, is considered by him to determine this. We are not prepared positively to controvert this conclusion. Taking as correct, however, the view of Virchow and others, confirmed by our author's own microscopic observations, that the "typhoid deposit" of the intestinal and mesenteric glands is not *specific*, it certainly admits of consideration whether causes which act specially on the bowels may not complicate the pathology of typhus, as the typhous (or typhoid) element is known to complicate malarial disease of the periodical type. Crowding, upon a gigantic scale, is spoken of as having occurred frequently, sometimes necessarily, in our armies; as in the great camps of the army of the Potomac before Washington during the fall and winter of 1861-2, before Yorktown during April, 1862, on the Chickahominy during June, at Harrison's Landing during July and August of the same year, and at the encampments at Cairo and before Corinth, in the West. Such populations are not only without the advantages of drainage and sewerage which cities possess, but, besides the actual excess of numbers, the men are often crowded together in their tents in a most unhealthy fashion; at least it was so during the first year of the war. The substitution of ponchos¹ and shelter tents for heavy and cumbersome tents previously in use has no doubt been of great advantage; but room yet exists for improvement in the ventilation both of tents and barracks. Dr. Woodward's remarks upon this subject are extended and admirably practical.

He next considers scurvy in its relation to the sickness and mortality of the United States armies. The statistical table presented by the Surgeon-General to Congress in February, 1863, shows a smaller proportion of recorded scurvy than is exhibited by the records of any great army that ever took the field. It would still be a mistake to suppose that these figures (4.7 cases per 1000 of mean strength, and one death per 35,000 of mean strength for the first year of the war) represent the whole influence on the army of the unhealthy conditions, which, acting in their highest degree, produce scurvy. The same conditions modify all the diseases of the armies subjected to them, and many cases reach only the early or preliminary stages of scorbutic disease, when it is arrested by opportune means of relief and cure. Many surgeons in our army are ready almost to deny that any form of the scorbutic diathesis has been manifested among the troops, to an important extent, during this war. But evidence abounds, to those who have seen, in camp or in hospitals remote from the field, the

¹ Square pieces of oil-cloth, with a slit in the centre, through which the head can be thrust; they thus serve as a mantle. Two ponchos, properly put together, form also a shelter tent.

sick of either the Eastern or Western armies, confirmatory of Dr. Woodward's statement that the scorbutic taint has played a momentous part among them.

Without the peculiar affections of the mouth, skin, or limbs, belonging to developed scurvy, many soldiers have been incapacitated for duty by extreme debility, with loss of appetite and digestive power, accompanied by a muddy paleness of the complexion, diarrhoea, and pseudo-rheumatic pains in different parts of the body. When intensified by the aid of other causes, or by the long action of insufficiency of diet, this affection may become fatal, while its scorbutic character may, unless to careful observers, be masked by dysenteric or other symptoms, which seem to account for death. The mortality from wounds, and after operations, has been notably increased in many instances by this insidious, but powerful cause. The sources of either open or latent scurvy are well considered by our author under the heads of *camp diet* (deficient especially in fresh vegetables), *want of exercise*, or *excessive fatigue, cold, moisture, exposure, bad ventilation, dirt*, and depressing emotions, especially *nostalgia*. Reference is made to the splendid volumes devoted to the Medical and Surgical History of the British Army in the Crimean War, as asserting and proving that *sameness* of diet, apart from its quality, is promotive of scurvy. Bad cooking, no doubt, contributes to the result.

The United States army rations, although improved by act of Congress since the outbreak of the rebellion, are still too deficient in fresh vegetable food. Desiccated vegetables are an imperfect substitute, and faulty cooking has caused them to be generally disliked by the men. Meat, in the fresh state, is liberally allowed; and Dr. Woodward is no doubt correct in acknowledging the ration of our army to be the most liberal and best constituted in the world. Less meat and bread, and more vegetables, would be an improvement; and our author suggests that such a commutation may be effected by a simple arrangement with the commissary, in every company. There are circumstances, however, under which an actual deficiency of fresh supplies exists for a considerable time, which cannot be so remedied.

In his exceedingly interesting chapter on Camp Fevers, Dr. Woodward states that, while typhoid fever, and malarial remittent fever, each with or without scorbutic complications, have frequently presented themselves, the characteristic fever of the army during the war has been of a mixed nature, to which, on his proposition, the army board has given the name of *typho-malarial* fever.

This affection is, as might be supposed from the fact of its hybridity, not uniform in its course or characters. Our author divides the cases into three groups, thus:—

"1. Fevers in which the malarial element, without being the only pathological condition present, is the predominant one.

"2. Fevers in which the typhoid element is evidently predominant, although the others are also present in a more or less distinct manner.

"3. Fevers of either of the above classes in which, either from the first or at some time during the affection, the scorbutic element becomes predominant.

"These varieties, however, are not sharply defined, but pass into each other by the most insensible gradations."—p. 77.

We cannot, without injustice to his very clear and concise language, condense Dr. Woodward's descriptions of these different forms or grades of fever, whose correctness all who have seen anything of army hospital

practice can fully verify. Of the first division, the somewhat abrupt commencement, gastric disturbance, and icteroid skin and tongue, with remissions, for a while at least, tolerably distinct, are prominent features. The lenticular spots of typhoid fever, and the sudamina and tympanites are often wanting altogether. The absence of the latter was the rule in all the cases, amounting to a considerable number, seen by the present writer among patients from the Chickahominy and Harrison's Landing, in the summer of 1862. A slower onset, less distinct remissions, more cerebral disturbance and diarrhoea, with epistaxis and bronchitis sometimes, but with both less constantly than in civil life, mark the predominance of the typhoid pathogenetic element. Deafness, under our observation, is less frequent than in civil life, but is sometimes very well marked. The aspect of the countenance, and the character of the somnolence and delirium, are precisely the same as in ordinary typhoid fever. The scorbutic complication is recognizable, in the third group of cases, by the peculiar mental and bodily prostration which precedes and follows the disease—the remarkable irritability of the heart, the state of the gums, tendency to hemorrhage, discolorations and petechiae, pallid, large, and smooth tongue, and extremely protracted convalescence. The *Chickahominy fever* was, as our author observes, a typho-malarial fever, with extreme intensity of all three of the influences above described, and especial predominance of the malarial and scorbutic elements. The last of these was very active in the camp fevers of Western Virginia during the winter of 1861-2, in the great camps before Corinth in the summer of 1862, and in the troops of the New Orleans expedition under General Butler.

A full account is given by Dr. Woodward, based on his own repeated and minute autopsies, of the morbid anatomy of typho-malarial fever. Precise details are afforded, especially in regard to the intestinal lesions. We may cite the following, as it will not bear abridgment.

"In its earlier stages there is little to distinguish the intestinal lesion from the similar process of ordinary enteric fever, except perhaps the great tendency to the deposit of black pigment in the enlarged follicles. In the later stages and more exquisite development of the tumefaction and ulceration, however, certain peculiarities cannot fail to strike the anatomist, which are often sufficiently distinctive to enable him to recognize typho-malarial fever by the *post-mortem* appearances alone. The tumefaction in typho-malarial fever rises very gradually from the surrounding mucous membrane, and attains a moderate degree of thickness (three to six lines) on the edges of the ulcer. In this it differs materially from the ordinary typhoid ulcer, in which the enlarged patch rises abruptly from the mucous membrane in such a way that the summit is often larger than the constricted base, giving rise to the comparison made by Rokitansky, who likens the shape of the tumefaction to that of flat, sessile fungi. The umbilical depression, so frequent in the ordinary typhoid patches prior to ulceration, has never been observed by the author in typho-malarial fever.

"The ulcer itself presents ragged, irregular edges, which are often extensively undermined in consequence of the erosion extending more widely in the submucous connective tissue than in the glandular layer of the mucous membrane. This characteristic undermining of the edges is much more extensive in these than in ordinary typhus ulcers." — pp. 102-3.

The reader must be referred to the volume itself for a long and interesting description of the microscopical appearances of the diseased follicles and the adjacent mucous membrane. Enlargement, multi-nucleation, and luxuriant proliferation of the cells both of the follicle and of the connective tissue surrounding it, are shown to be the first important changes, in the patches

of Peyer as well as in the solitary follicles. The fibrous matrix is thus encroached upon and gradually suppressed.

"At a later stage in either the solitary or aggregated glands ulceration sets in. The granular material by which the minute cells above described are cemented together, liquefies; the cells themselves become atrophied, irregular, and angular, like the corpuscles of tubercle. A slough-like exfoliation of the mucous membrane immediately over the tumefaction appears to be the beginning of the process of actual ulceration. This is followed by the casting off of the superficial cells, and subsequently by the further liquefaction of the scanty intercellular adhesive material; the deeper portions undergo the same fate."—p. 105-6.

Following Virchow and Bennett, our author thus sets aside the conception of a peculiar "typhoid exudation" such as was morphologically compared by Rokitansky to encephaloid cancer, and by Carl Wedl to tubercle. The influence of the pathological views of the author of the "Cellular Pathology" pervades, in a certain sense, the volume before us. Dr. Woodward sedulously avoids, however, all merely theoretical considerations; so much so as to leave a certain bareness in his statements in regard to the nature of the diseases considered. This is, of course, to be preferred to baseless speculations. On the subject of the nature of typho-malarial fever his remarks are correct, practical, and important. We cite only their conclusion.

"On the one hand, typho-malarial fever is not to be regarded as a new disease in the ordinary acceptation of the term, that is, as an affection characterized by a new pathological element. Nor, on the other hand, is it just to look upon it merely as a modified enteric fever, since the malarial and scorbutic phenomena which accompany it are predominant in many cases—perhaps, on the whole, in the greater number. Much rather should it be considered simply as a new hybrid of old and well-known pathological conditions, in which the exact train of symptoms is as variable as the degree of preponderance attained by each of the several concurring elements." * * "It is practically of little importance what view the physician accepts, provided he observes the influence of the several hygienic conditions concurring in the production of the disease, learns to recognize the preponderance of one or other of these by the special train of symptoms present in each individual case, and carefully modifies his treatment accordingly. The danger of regarding the affection as a new disease is, that this view is calculated to impel the physician into the search for a new therapeutical remedy. The danger of regarding it as a mere enteric fever is, that it would lead to the employment of the unmodified treatment of the latter affection. If, however, the affection be regarded as a mixed one, the practical importance of addressing treatment to all the conditions present becomes at once apparent."—pp. 110-11.

This therapeutical principle is of the highest consequence to all who deal with the diseases of the army. We believe, from some opportunity of verifying it in hospital practice, that, under otherwise favourable circumstances, its application may maintain the mortality of typho-malarial fever at a low figure. Dr. Woodward's statement is that of 74,619 cases of all camp fevers, 6315, 1 in 11.8, died in the first year of our war. Compare this with the account given by M. Scrive of the camp fevers of the French army in the Crimea; where of 11,124 cases 6018 deaths are reported, or one death to every two cases. Yet, one-third of all the mortality from disease in our army has been referred to fevers of different types or grades.

Hygienic measures are insisted upon by Dr. Woodward, both for the prevention and cure of typho-malarial fever, as more important than

medicines; although the latter, skilfully employed, are also of great value. The site of camps and hospitals, their ventilation and police, and the diet of the sick, are well discussed at length in this connection. Equally sound practical directions are given for the therapeutic management of our prevailing camp fever; being an application in detail of the principle above enunciated of adapting the treatment in every case to the combination, in diverse proportions of predominance, of the conditions of typhoid fever, of malarial remittent, and of the scorbutic cachexia. The use of quinine is ranked, as it should be, as a cardinal part of the medication; but not as an exclusive reliance. We can only refer the reader to the chapter itself for the admirably elaborated particulars of this plan of treatment.

The diagnosis between typho-malarial fever and bilious remittent, enteric or typhoid, typhus, and yellow fevers, is considered in the next section. As we have alluded already to Dr. Woodward's views in regard to the almost total absence of typhus from our army, it will be only just to cite a paragraph or two upon its distinctive characters.

"The points to be relied upon in the diagnosis of typhus fever from enteric and typho-malarial, are the following: Its shorter duration; the severity and abruptness of the attack; the presence of the peculiar typhus eruption; the greater intensity of the adynamic phenomena in typhus; the peculiar and intense heat of skin; the frequency of pulse early in the disease; the more intense duskiness of countenance; the decided and characteristic stupor; and, finally, the absence of diarrhoea, and of all the abdominal phenomena of the enteric or typho-malarial fevers. Attention to these points will generally make a diagnosis easy. But, besides, typhus seldom occurs sporadically: it is apt to occur as an epidemic, and the majority of practitioners believe it to be propagated by contagion."—p. 155.

Contagion is not asserted or believed in as a mode of extension of the typho-malarial fever in any part of our army, so far as Dr. Woodward has ascertained. Cases in which scorbutic depression is decidedly marked are, in his opinion, sometimes mistaken for typhus; and the same is supposed to occur in certain cases of "congestive intermittent."

We pass, without space for remark, over a well-digested chapter on the different types of pure malarial fever as they have occurred in our army, and on the very important subject of chronic malarial poisoning.

Epidemic jaundice occupies the fifth chapter of the book. Nearly eleven thousand cases, and forty deaths, were reported as due to this disease in the army of the first year of the war. More prevalent upon the Atlantic than on the Pacific slope, it attained its greatest intensity in the central region of the continent; the armies of Generals Grant and Buell suffering far more than any others in the field. Next to these jaundice was most frequent among the troops in Western Virginia. Its association with malarial influences was apparent, and yet its monthly fluctuations did not in any way correspond with those of malarial fevers; and, contrary to what might be anticipated in view of the relation believed to exist between heat and hepatic disorder, it was most common in the winter and spring, and rarest in the summer. It was a troublesome and tedious affection, but not dangerous; the mortality being but one death to every 2732 cases.

An excellent *résumé* is given of the symptoms and pathology of jaundice. Between the two forms of the disease, the one due to suppression of the secretion of the liver, and the other to its obstruction, an accurate means of differential diagnosis is asserted to exist in the presence or absence of the biliary acids in the urine. Dr. George Harley's experiments

seem to have established the fact that, while the bile pigment is invariably present in the urine of jaundice, the bile acids only occur there in cases of obstruction in the ducts, the bile then secreted and accumulated being reabsorbed into the blood. Comment is made also upon the valuable investigations of Drs. Austin Flint, Jr., and J. H. Salisbury, published in this journal.¹

In the treatment of jaundice, while he asserts the importance of promoting the hepatic secretion, Dr. Woodward dissents altogether from the "majority of the text-books" in regard to the value of mercurials for this end.

"Experience shows," he observes, "that when given as a purgative, the power of the mercurial is far less than the extravagant praises bestowed upon it would lead the surgeon to expect; its efficacy is certainly not greater than that of some other purgatives in use, while, if given in alterative doses, it may very generally be pushed to gentle salivation, without producing any decided modification in the icteroid condition. Modern physiological observation, moreover, has rendered it exceedingly doubtful whether mercurial preparations exercise any direct effect in increasing the hepatic secretion. In view of this uncertainty of action, and of the debilitated condition which very generally attends jaundice among troops, it will be found advisable to abstain wholly from the use of mercurials, and to rely upon simpler and less dangerous remedies."—p. 202-3.

So far as this opinion is based upon direct experience, individual or general (upon which we hope to learn more in the completed Medical History of the War), it is entitled to its full weight as experience. But we must protest against any such a conclusion on the ground of "physiological observation." In the first place, that observation affords no strong support to the above-stated view. In the words of Lehmann, "There have been many experiments, but far more controversial discussions" in regard to it. The latter authority adopts the experiments of Buchheim² made under Bidder and Schmidt's directions, upon dogs, with artificial fistulous openings between the gall-bladder and the external abdominal walls, showing that the administration of calomel actually causes an increased secretion of bile. We are confident (although without the means of reference at hand) that Harting's experiments were to the same effect. And what if one or more experimenters have met with negative results? The difficulties and complexities in such a mode of investigation are at least as great as in the observation of cases in the practice of medicine, while the number of skilled observers is very much less in the physiological than in the clinical arena. It is a principle which bears and requires iteration, that clinical medicine is entitled to its own evidence, and should maintain its own jurisdiction; while it should be ready at all times to receive suggestions and to weigh facts contributed from any scientific source. On this ground, in view of the immense amount of practical experience in the profession upon this point, we cannot consider reason to have been yet afforded for *ruling out* mercurials in the treatment of hepatic irregularities in civil practice; nor do we even feel satisfied that they ought to be excluded from the armamentaria of the military surgeon. Especially does it seem premature to follow the recommendation of such an exclusion with strong praise of podophyllin as an entirely reliable substitute, since, however well the latter deserves confidence (and we are practically aware that it does so), the amount

¹ Oct. 1862, and Jan. 1863.

² Lehmann's Physiol. Chemistry, Philada. ed. vol. i. p. 535.

of experience in its favour is not a tithe of that which has given its commonly accepted place to mercury.

Camp diarrhoea is our author's next subject, and is elaborately and very skilfully treated, under the heads of simple diarrhoea, acute enteritis, acute dysentery, and chronic diarrhoea. The sharp distinctions between dysentery and diarrhoea in civil practice, do not, it is observed, maintain themselves in those forms of disorder of the bowels which prevail in our armies. 215,214 cases of these affections, of which 1194 were fatal, were reported to the Surgeon-General's office during the year terminating June 30, 1862. Yet this number of deaths probably does not represent the whole amount of mortality actually occurring from intestinal disease, since intercurrent affections may have been credited with some deaths, and soldiers discharged for disability may have afterwards died of chronic diarrhoea. As in the case of fevers, the Central region was most prolific in diseases of the bowels, the Atlantic region next, and the Pacific last.

The general history of diarrhoea in the army, as written by Dr. Woodward, is of great interest. His descriptions of the different varieties of the disease are graphic, as well as full; and his practical recommendations will be, we believe, sustained by those who have met with the disease in any part of the army. Especially is it important to note the evidence which has authorized him to state the part which the scorbustic influence has exerted in modifying and aggravating bowel affections, and, accordingly, in indicating peculiarities of management. The diet, for instance, which, in *ordinary* diarrhoea, would be unsuitable, *e. g.*, fruit and vegetables, in the *scorbustic* diarrhoea (scorbustic dysentery of the Crimea) has proved among the most essential palliatives and means of cure.

Our author's picture of this worst form of chronic diarrhoea is vividly drawn. It includes all the features of progressive general debility and emaciation, without, usually, great frequency of the discharges, or much pain, unless in the back and limbs. The appetite is variable, but generally weak, and the digestive power low; a longing for acids and vegetables prevails. To our view, the *last* stage presents a considerable resemblance, in aspect, to the collapse of malignant cholera. Frequently, intercurrent pulmonic congestion (we have repeatedly seen even suppurative pneumonia) rapidly terminates life. In other cases apoplexy or uræmia may produce the same result.

One rather striking accompaniment of the worst cases, as seen in the hospitals of this city, in patients coming from the Chickahominy, is not mentioned in this connection by our author, although incidentally alluded to elsewhere. We mean the purpuric extravasations on the limbs and body. Although many recover whose arms and legs are for a time covered all over with blue, purple, or black spots, the decided blueness from extravasation over the sternum or epigastrum has been a fatal sign in every case which we have seen, except one. Another feature occasionally observed here was apparent temporary convalescence, interrupted by sudden death, or an abrupt relapse, ending in death in a very few days, neither of these changes being explained by any cognizable cause.

The morbid anatomy of camp diarrhoea has received Dr. Woodward's careful attention. The chief lesions are found in the colon and small intestines; the mucous membrane, especially of the former, being softened and thickened, the solitary and agminated closed follicles enlarged, with a tendency, especially in the colon, to the formation of ulcers (not always present), the starting-points of which are usually softened and broken-down

solitary follicles. The ulcers of the ileum, when they occur, are generally minute, punctiform, with a yellowish base, surrounded by a reddish areola. Sometimes they are larger, with irregular edges, and an ash-coloured base. The bloodvessels of the ileum, particularly near its lower part, are commonly much injected.

In the colon, the morbid changes are most constant and intense at its two extremities, the caecum and the sigmoid flexure and rectum. The mucous membrane varies in colour from dark, livid red, to slate colour, ash colour, or greenish hues. Pigment deposits in the enlarged, closed follicles are very common in both the large and the small intestines. The thickening of the mucous coat of the colon is often very great; and especially in the absence of ulceration, it is not infrequently covered with an abundant pseudo-membranous or "erulous" deposit. This always has, however, under our observation, less consistence, and a more granulated aspect, than the false membrane either of eroup or of diphtheria.

The minute histology of these lesions is considered by our author with the same minuteness of detail as he had already given to those of typho-malarial fever. They have, as he states, importance in determining the true nature of the disease, and, also, "the profoundest interest, from their bearing on the modern anatomical doctrine of the inflammatory process." We cannot forbear remarking, at this point, that, interesting and valuable as they are, they illustrate the truth that *no* purely anatomical (statical) doctrine can, as such, include the whole account of any pathological process. If we do not misunderstand him, Virchow himself propounds this truth.¹ In the words of the laborious pathologist, Wedl,² "an unknown quantity must also be considered, namely, the *vital factor*." Between multi-nucleation and luxuriant cell-multiplication, and sphaerulant or ulcerative degeneration, described in our text as succeeding each other, there must be either a connecting link or a dividing line—what and where is it? The cellular pathology cannot yet, in this or in any other case, be considered as a complete pathological finality. We must not, in this remark, be understood as hesitating to accord to Dr. Woodward's minute examinations and descriptions the highest admiration. Few are able to do the same justice to such a subject.

Camp measles, described in our author's seventh chapter, is credited with 551 deaths, out of 21,676 cases, during the first year of the war. Were its sequelæ to be included, it would number a much larger number of fatal results. It generally appeared as an epidemic at an early period in the history of each regiment. No part of the army escaped it; but it was most destructive in the valley of the Mississippi and its tributaries.

Dr. Salisbury's theory of the fungous origin of measles is examined by Dr. Woodward, with candour and care, and is decided to be insufficient, as a generality, at least. Of the "straw fungus" he observes, that

"It is a form of *penicillium* of the most frequent occurrence, and is widely distributed through the country. The personal observations of the author have shown him that it is formed abundantly in every stable where straw is used as bedding, in every wheat sheaf or stack of grain which stands exposed to the weather. If Dr. Salisbury's views are correct, every thrashing floor and stable should be a focus from which the disease should originate and spread. How do those farmer's children, who play continually among the ricks of grain, happen so often

¹ Cellular Pathology, Philada. ed., p. 325.

² Rudiments of Path. Histology, Syd. Soc. ed., p. 33.

to reach manhood unscathed by an affection to the cause of which Dr. Salisbury would teach us they are continually exposed?

"Since reading Dr. Salisbury's paper, the author has several times produced the straw fungus by shutting up damp straw in a box, as proposed in that essay, and has inoculated with the fungus a number of persons, among others himself, A. A. Surgeon Curtis, U. S. A., and Hospital Steward Whitney, U. S. A., without, however, producing any perceptible effect, except sometimes the formation of a little ulcer at the point of inoculation. The fungus used in these experiments was produced in the same manner as that used by Dr. Salisbury, and was identical with it in microscopical characters."—p. 278.

Dr. Woodward admits that these negative results cannot contradict positive ones, if correctly observed; but he suggests a source of error in Dr. Salisbury's observations, namely, that they were made during the prevalence of an epidemic of measles. How far were the effects he imagines to be due to the fungus the result of the epidemic? We must leave it for Dr. Salisbury himself to answer that question.

Catarrh has furnished over a hundred and twenty-five thousand cases to the Army Medical Reports for a single year. It was frequent, as regards season, precisely in inverse proportion to diarrhoea; the former being at its maximum in winter, the latter in summer. Its prevalence was about equal in the three great geographical regions in which the army has been operating.

Pneumonia has been very common and very fatal among our troops. Of 11,061 cases reported 2134 died. This is as great a mortality as that from the same affection in the Crimean war; being, in fact, about one death in every five cases. This would seem to indicate, as our author remarks, either an unusual severity of the complaint or some radical defect in the treatment. Passing over Dr. Woodward's brief but unexceptionable account of the disease as it has occurred in the army, almost altogether, as he states, in the asthenic form, we must consider for one moment his therapeutical observations in regard to it. After mentioning the mode of treatment of pneumonia directed in "the text-books most widely circulated in this country," including local and general bloodletting, purgatives, antimonials, &c., he continues thus:—

"The author is not disposed to enter in this place into a discussion as to the general propriety of such a course of treatment. To do so would require more space and time than are here at his disposal, and for the purposes of the present volume this question can be quietly ignored. So far as the treatment of pneumonia in the army is concerned, however, there can be no doubt that the plan above sketched is altogether inadequate, and that it rather increases than diminishes the mortality of the affection. The experience of the last two years permits no other conclusion, and we are compelled to believe that bloodletting, antimonials, and mercurials are not available for the treatment of camp pneumonia at least, whatever may be affirmed of their efficacy in private practice by those who still cling to the habitual employment of those renowned remedies." "Cases often do well which have been treated with these heroic agents. But they increase the debility and exhaustion of the latter stages and the tendency to exhaustive suppuration."

As a general practical conclusion this may be quite true of army pneumonia; yet even there we cannot but think it somewhat too dogmatically stated. Does the mere fact of being a soldier, under all possible circumstances, necessarily involve an adynamic condition of system, an asthenic tendency in disease? Such facts are largely general, but not absolutely universal. We have known instances of men who have returned from a fortunate campaign with all their forces improved, their *physique* decidedly better

than when they left their homes. The diseases of such might be sthenic, even in camp or hospital.

Again, what is the basis of experience on which the "antiphlogistic treatment" of army pneumonia is ignored? Has it been extensively employed in the army during the war? The extended "medical history" may, we hope, answer this question. If it has, then the terrible mortality of one death in five may, perhaps, be laid at its door. If it has not (which prevailing views, *malgre* the text-books, make rather most probable), then we must await a further explanation as to how the experience of the army, shown in such results, can have justified a positive and final conclusion. Not now pleading for any plan of treatment, it is our purpose simply to object, in the interest of general, if not of military practice, to too sweeping conclusions of any kind upon so important a subject. It may not be irrelevant to express at the same time the conviction that the mortality of pneumonia in private practice, within the range of our cognizance, has been *greatly increased* during the last half dozen years, through the withholding by so many of those time-renowned measures of relief dreaded by our author and by others. While, it may be remarked, Dr. Woodward has such fear of the depressing influence of bloodletting and antimony, he does not have the same apprehension in regard to aconite and veratrum viride—the dose of the latter, for instance, being increased (from two or four drops every two hours) until the pulse is brought down sufficiently. It is true that he evinces a wholesome caution in this mode of practice, averring that it has the advantage above antimonials only in its over-depression, if produced, being of briefer duration. Digitalis he considers to be far superior to either of the other sedatives named, in practical value. We must be content with simply expressing a dissent from this belief.

Dr. Woodward's views in regard to the use of stimulants appear to us sound and well stated. His practical precepts generally are so, notwithstanding that we have been compelled to venture occasional disagreement with him. Our review of his book must now conclude with a mere mention of the last, an excellent chapter on *pseudo-rheumatic affections*, and an Appendix, containing the forms for army reports of sick and wounded, and other collateral matter.

Assistant-Surgeon Woodward has, in this ably and carefully prepared volume, made an important contribution, not only to military medicine, but to the medical literature of the country. It must take a place among our standard practical works—on the same shelf with those of valued authors who have from time to time treated of the diseases of this country, not as theorists or mere compilers, but as observers. We may well hope to find, in the volumes preparing under his care, of the Medical History of the War, the best qualities which such a work can demand for usefulness and literary excellence.

II. H.

ART. XIV.—*Handbuch der praktischen Medicin*, von Dr. HERMANN LEBERT, Professor der Medicin Klinik und der Speciellen Pathologie und Therapie in Breslau. Dritte verbesserte Auflage. Tübingen, 1863.

A Manual of Practical Medicine, by Dr. HERMANN LEBERT, Professor of Clinical Medicine and of Special Pathology and Therapeutics at Breslau. Third edition. Two vols., pp. 1091, 1074.

THE appearance of a new work upon the practice of medicine is always an interesting event to the medical scholar and the practitioner; it gives them a correct record of the progress made by the science since the last text-book appeared which is now becoming dingy on the shelves; it is presumed to present the position occupied by the art at the date upon its title-page; and in it are supposed to be summed up all the knowledge we possess in regard to diseases, and all the resources which study and observation and research have accumulated to cure them or to obviate their effects.

It is perhaps not too much to claim that more than ordinary interest attaches to a new work on this subject in a foreign language. While the objects of the science are as wide as our common humanity, limited by no territorial lines, there are well-known national peculiarities of thought and study, and divisions of the subject in the prosecution of which some nations are peculiarly apt. To observe and compare the result of these peculiarities in working out the great problem of the successful treatment of disease cannot but be highly beneficial. There are many important, very important, questions in regard to the application and effect of remedies yet subjects of discussion among us. Can we obtain any aid in their decision from the experience of one who has used them in the same diseases, but perhaps under different conditions? Can we derive any further information in regard to diseases than we already possess, either as to their relative frequency and mortality; or, more important still, as to their *natural history*—their course and termination when uninterfered with by art? Is the correctness of conclusions to which we have arrived substantiated by the testimony of an educated and experienced foreigner; or, is the necessity of their revision forced upon us by the diverse results at which he has arrived? These are some of the questions which naturally present themselves as we take such a work in our hands, the importance and interest of which justify us in our attempt to lay before our readers some information in regard to the latest and the leading work of the kind upon the practice of medicine in the medical literature of Germany.

As none of the author's works have been translated into our language, the presumption that some information in regard to him is necessary probably needs no apology. In Europe he is already well known to the profession, and his reputation is as high as it is extended. The scientific works upon which this rests occupy the highest rank, and some of them will certainly never be surpassed until our science shall have received other aids than it now has, and passed, in the progress making by all human knowledge, far beyond its present position. The chief of these may be briefly mentioned: In 1845, he published, in the French language, a treatise upon Physiological Pathology, in two volumes, octavo, with an atlas of twenty-two plates, consisting of experimental, microscopical, and clinical

researches upon inflammation, tubercle, cancer, and allied subjects. In 1849, his *Traité Pratique des Maladies Scrofuleuses et Tuberculeuses*, an octavo volume of 820 pages, obtained the prize of the Imperial Academy of Medicine of Paris. In 1851, he published a *Traité Pratique des Maladies Cancereuses et des Affections Curables confondues avec le Cancer*, frequently quoted by some of the best writers in our language. But the work by which he is best known is his *Traité d'Anatomie Pathologique Générale et Spéciale*, the publication of which, by numbers, commenced in 1855. This beautiful work, the pride of every scholar fortunate enough to have a copy in his library, and the especial delight of every pathologist, consists of two volumes folio of text and some two hundred sheets of plates, drawn and engraved from nature, and the most of them coloured. It was the fruit of more than twelve years' labour in the hospitals of Paris, and he received assistance in its preparation from many of the most eminent physicians and surgeons of these establishments, while the proceedings and discussions of the various learned societies of the French capital afforded him rich materials. While, then, his experience as an author has been great and his success abundant, his labours as a practitioner have been such as to well qualify him for the preparation of such a work as that he now presents. How many years he has spent in private practice we cannot say; but besides the years of patient toil and investigation in Parisian hospitals while preparing the works we have mentioned, he was for five years at the head of the hospital of Zurich, in Switzerland, and is now and has been for five years past occupying the important chair of practice and clinical medicine at Breslau. These facts are enough, we believe, to authorize him to speak "as one having authority," to guarantee to us that, in referring to his book for instruction, we are seeking it of one able to give it, and to convince any one that if the author has ability, and those qualities of mind so necessary for success in practice, equal to the opportunities he has enjoyed, as we think we shall be able to show he possesses, then his work is well worthy our esteem and confidence, and must occupy a high position in the medical literature, not only of his own country, but of the world.

The work consists of two octavo volumes of nearly eleven hundred pages each, and the present is the third edition, the first having appeared scarcely more than three years ago; a fact which speaks far more strongly in its favour than it would in many other countries. It has already been translated into the Russian and Dutch languages, and has received the highest praises from medical journals of other countries. Its character in Europe is therefore well established; equally with the author, it has won a position beyond all question; and in turning to its examination our chief fears are that we cannot adequately avail ourselves of the valuable matter it contains, or do full justice to its many excellent characteristics.

We may state, first of all, what the work does *not* contain: it has no chapters introductory to its subject—a preface and a brief chapter upon classification, and the great division of the exanthemata is at once entered upon. There are no essays upon general pathology or therapeutics, and no space taken up with instruction in auscultation and percussion; with these subjects the student is presumed to be already acquainted. On the other hand, it contains several classes of disease not usually found in works upon practice in our language, and some of them we would gladly have seen omitted, and the space occupied by more full details in regard to other affections. Diseases of Females, for instance, take up about one hundred

pages, a space insufficient to do them justice, and a needless compendium for those having access to the works of Kiwisch and Scanzoni. The article upon ovarian disease is very unsatisfactory to a reader of West and Simpson; it is certainly the least valuable part of the book. Then we have the subject of syphilis, extending over one hundred pages, which we find always in the works of surgeons, but which is here very ably, although briefly, presented; the arguments *pro* and *con* in regard to the duality of the virus, the infecting chancre and the chancroid, being fairly given, while due attention is bestowed upon internal or viscerai syphilis, and especially affections of the nervous centres. The subject of toxicology occupies some one hundred and thirty pages, and is classified with German minuteness, including poisons of the animal, vegetable, and mineral kingdoms; extending from the bites of insects and the stings of bees to glanders and hydrophobia; from chronic and acute alcoholic intoxication to the injurious effects of spurred rye and the celebrated national sausage poison; from the vegetable alkaloids, including conia, nicotin, and picrotoxin, to the gases and the metals.

The chief aim of the author has evidently been to furnish a usefnl book, adapted to the every-day wants of the practitioner, and having for its basis the results of his own observation and experience. In his preface he acknowledges the difficulties incident to the undertaking, yet says he advances cheerfully to the task, believing the effort due to himself in order to substantiate doctrines long taught at the bedside, and to gratify his wish to assist in forming good practical physicians, which has been, ever since he first entered upon his career, his "chief desire—his firm and unalterable purpose." He has therefore tried to adapt his work to the latest attainments and the most advanced position of the science of which it treats. He has aimed to avoid, on the one hand, the vague generalities of those who do not write from actual observation, and, on the other, the mere compilation which results from the study alone of the writings of others. His descriptions of disease are clear, impressive, and faithful; the pathological anatomy is given briefly, yet plainly, and always with reference to the functional disturbances which occur in connection with it; he accords to every mode of investigating diseases or symptoms its just value, yet expresses regret at the tendency which is shown to a too exclusive use of physical means of diagnosis; he lays stress upon the relative worth of symptoms as occurring in different relations, is careful to notice the modifications which may occur in the forms and in the course of the same disease, while he places high value, and it can scarcely, we think, be too high, upon knowledge of the *natural history* of diseases—of the course they run when uninfluenced by remedies and uninterfered with by art. He considers the study of etiology as far more essential than formerly in regard to classification as well as to treatment; but "by etiology is not meant that vague and superficial definition with which, unfortunately, we have too long been content. Only well-founded and strongly-criticized facts, and particularly such as have been discovered by the keener and more penetrating modes of investigation, should find a place in special etiology. And here not only physical and chemical studies are of service, but experimental pathology, as carried on by Frerichs, Virchow, Stieh, Tiersch, and others, is of the greatest service." In regard to therapeutics, after stating that he will take the most especial pains to present everything having reference to this branch of this subject, he says:—

"The Nihilismus which first, thirty years ago, spread out from Paris as a reaction from the excesses of Broussais' doctrines, and from Kothen under the mystical and deceptive name of homœopathy, is approaching its end, as every exaggerated doctrine in our science is sure to do. How injurious the results of this nihilismus are I see every day in the hospital, when severe cases of disease treated only expectantly have dragged along through many weeks, and are finally brought dying into the wards; or in cases of commencing chronic inflammation yielding rapidly to energetic measures, while before, under an inert treatment, the symptoms had constantly increased in severity and kept the poor patient for many weeks unable to pursue his avocation. Happily, too, the old polypharmacy is abolished; an exuberant therapeia stands no more in need of this than does chemistry of alchemy. Simple and powerful methods of treatment furnish happy results, while there is also a series of diseases running a typical course, which are generally best treated expectantly, in which, however, a careful symptomatic therapeutics can render essential service to the patient."

In classification the work very much resembles Prof. Wood's *Practice*. Expressing frequently great admiration for our countryman, a personal friend, and evidently familiar with his writings, it must occur to any one examining this book that the similarity is too great to be accidental. However this may be, he has not presented his plan without deliberation and evident labour; he does not fail to confess the difficulties and embarrassments which attend this part of his work, or the unsatisfactory results obtained, arising from the great amount of unexplored territory yet belonging to the subject. The precise and well-defined classification of the natural sciences is the attainment desired, which is rendered impossible not only by the less well-defined lines dividing diseases, but by the necessity of considering the "unity of the organism" in disease—a point he is careful to impress in many relations; for him there is never a disease in the body without a body diseased. He alludes to the French school as too purely anatomical in its classification, thereby sacrificing breadth of view and scientific character. For his own country he claims the honour of giving the impulse to physiological medicine, which enters more deeply into the details of pathological processes and of molecular changes, and connects pathology with the general biological laws of the economy. He mentions Bernard, however, as one of the best examples of this school. But, he says:—

"Let us not delude ourselves: we have only entered on the prosecution of our studies upon this plan, and from its comprehensiveness, its depth, and the inherent difficulties which attend it, a very long time will elapse before it is completed. The time has passed away, however, in which there can be schools and the doctrines of schools. The childish confidence in the infallibility of single great observers has given place to that manly earnestness which is far more concerned in the investigation of the nature of the occurrences than in commenting upon the works of predecessors. None the less honoured are the great inquirers of all times, but the truth is now esteemed more highly than the searcher after truth."

In treating of each disease, the author commences with a short historical sketch of the origin and progress of our knowledge in regard to it, a point of extreme interest to every real student of his profession, and in fact more valuable than interesting. He justly claims that by knowing what has already been done in the course of time, both by observation and comment, to establish a doctrine, we are restrained from exaggerations and false assumptions, and so are enabled to arrive at that calm decision and firm conviction without which it is impossible to be a good and successful practitioner of medicine.

The bibliography of the work is copious, and gives evidence of a full

acquaintance and close examination of the writings of others, revealing the faithful and prolonged study which he has devoted to disease at the bedside and its effects in the dissecting room. Nor are his quotations limited to works of his own country and language; they extend from the ancient writers to the latest works from the press, and include not only the writings of French and British authors, but those of our own country as well, an occurrence we need scarcely say well worthy of notice, for, although English writers are beginning to do justice to our scientific labours, it is rare, indeed, that a continental author shows any acquaintance with American medical literature. The work of Wood upon *Practice* is frequently quoted, and the highest praise awarded to its author. In giving the history of diphtheria, he calls particular attention to the work of Samuel Bard, of New York, as preceding Bretonneau's, "as being, to a certain extent, the origin of modern works upon this subject." It is true his acquaintance with this work was made through a French translation (by Ruette, 1810), yet we are glad to see the honour accorded to our country. In treating of diseases of females, he quotes Dewees and Meigs, and in the notice of yellow fever, we find the names of Rush, Jackson, Dickson, and Mott, and reference to the *Philadelphia Journal of Medicine* as well as to this journal.

Particular attention is given by the author to the subject of hygiene and the prophylaxis of disease, also to the relations of the disease, where required, to surgery, and reference is made to surgical authorities upon the subject. Another feature worthy of mention is the consideration of diseases as occurring at different ages of life; all the more important diseases are treated of first as occurring in the adult, then as occurring in children, with the modifications of course and treatment, and again a chapter upon the same disease in the aged.

If now we were called upon to give briefly the most marked features or characteristics of the work and the author, they would be as follows: First, and most important, the solid foundation of personal observation upon which all statements and doctrines are founded. His experience, already alluded to, has been vast; and he makes the statement that the work is based upon six thousand written cases which he has collected within about twenty-five years. These, too, have been observed in all classes of society, and are drawn from hospital, dispensary, and private practice, for he justly claims that observations made only in the wards of a hospital do not meet the requirements of practical life. Second, great independence of judgment. It is of little consequence to him who supports this or that mode of treatment; a remedy having been found efficacious in a certain disease he administers it, and as a scientific empiricist, allows no questions of theory to trouble him. Thus, in regard to bleeding, he not only uses it, but in a class of patients in whom it is rarely recommended now; in giving the treatment of broncho-pneumonia in the old, he carefully warns against the fear of bleeding this class of patients, and relates that in one location he established himself in practice by the success which attended his treatment of pneumonia in aged persons by moderate bleedings, a measure which others were afraid to put in force. Third, the thorough acquaintance manifested with the whole range of medical literature. Fourth, great candour in fairly stating modes of treatment recommended by others, whether his experience has proved them to be the best or not.

To attempt an examination of a work so extensive as this would occupy far more space than we have at our disposal, while a critical comparison of

its merits with all other works extant upon the subject would perhaps as far surpass our ability; we prefer, therefore, to select a few leading diseases, and confining our attention to them, give such an exposition of the author's style and treatment of his subject as shall enable our readers to estimate his merits, and so judge whether his acuteness of observation compares with the opportunity he has had for its exercise, and his judgment in choosing and adapting remedies to cases equals his learning and his candour.

We select for the first typhoid fever. Our author's classification of Fevers is into a group of malarial fevers containing intermittent and remittent; a group of the various forms of typhus—1. Abortive typhus; 2. Abdominal typhus; 3. Typhus anentericus (exanthematicus), and a group of "acute febrile diseases of miasmatic¹ origin allied to typhus," containing—1. Recurrent fever; 2. Bilious typhoid fever; 3. Yellow fever; 4. Plague. It may be well to state that by "bilious typhoid fever" the author does not intend any form of our well-known bilious fever, and the *typhoid condition* of this fever he carefully distinguishes, but a disease of epidemic nature, which prevails in Southern Europe and on the shores of the Mediterranean, and with which he has had very little personal acquaintance, his knowledge of it being derived from Griesinger, to whom he accords the praise of having written one of the best treatises on fever extant (vol. ii. of Virchow's *Specielle Pathologie und Therapie*). For the distinction and description of "abortive typhus," however, our author claims credit, believing it to be an important advance in our knowledge, and to have an important bearing upon our studies. He claims that the disease called by the Germans and French "mucous fever" (Schleimfieber, fièvre muquine), and what we should term a mild form of typhoid or enteric fever, is a distinct disease, which, on account of its brief course and favourable termination, should be separated from abdominal typhus and considered by itself. The influence of this view upon statistics will be seen at a glance; thus, of 800 cases of typhus observed by the author in Zurich alone, and he has seen the disease in Paris and Breslau, 170, or more than 20 per cent., were abortive typhus, and of these not one proved fatal. The influence of this view upon treatment is no less important, especially upon those plans of treating typhoid fever which are every now and then brought again before the profession by some enthusiast, the design of which is to cut short the disease in its early stages. Why talk of abortive methods of treatment, the author well asks, for a disease which in one-fifth of all the cases will terminate within a short period without any remedies whatever? He looks upon typhus as being, from its origin, either of the abortive or regular character, and resembling variola or cholera in this respect that during the same epidemic cases may be very severe or very mild independent of any effect of remedial measures. We confess we are in doubt as to the author having made out his case in favour of the new disease; he admits that it prevails at the same times and seasons and in company with typhoid fever—that it affects the same class of patients—that the prodroma and the symptoms are almost identical; indeed he confesses that the abortive typhus sometimes runs into the abdominal or regular form, and that it is "often impossible to draw a well-defined boundary line between the two"! But again, in treating of abdominal typhus, he says, "that an attack of abortive typhus does not afterwards protect from

¹ Not used in the limited sense of marshy miasm, synonymous with malaria, but implying any emanation.

this disease I have certainly seen in a series of cases." Meantime the influence of this separation of the milder from the more severe disease upon the statistics of the mortality observed by the author in typhoid fever, should be kept in mind.

In opening the subject of typhus, he congratulates his readers upon the recent escape made from confusion upon this subject; the *typhoid condition* of acute tuberculousis, of pyæmia, uræmia, and other diseases is no longer confounded with typhus or with typhoid fever; neither is there any longer a cerebral typhus, or a different form of disease recognized according as head, chest, or abdominal symptoms predominate; the strife about typhus or typhoid fevers is also so far allayed that "all the best pathologists recognize at present the ileo-typhus, [typhoid, enteric fever,] and the exanthematic [or true] typhus without enteric localization, as indeed allied, but yet different diseases, between which, however, no sharply defined entological boundary line exists."

Upon this interesting point, the identity or non-identity of typhus and typhoid fevers, he also says that the profession has been misled by the frequent occurrence of wide-spread epidemics of typhus, while the absence of these for some time past has justified the belief in the almost exclusive existence of typhoid fever, "and while formerly the identity of the two was too confidently maintained, the tendency now is to divide them too markedly. We shall probably arrive nearest the truth when we admit great analogy between the two forms with well-marked differences, not maintaining their identity, but at the same time not seeking to draw between them a too well-defined and constant boundary line."

Typhoid fever, or, as he prefers to term it, "abdominal typhus," he defines as "an acute febrile disease, accompanied by deep prostration of the nervous system, disturbance of the functions of the alimentary canal, generally diarrhoea and ileo-caecal pain, with swelling of the spleen, and roseola. Anatomically it is characterized by swelling and ulceration of the intestinal glands, enlargement of the mesenteric glands and of the spleen, and by a profound alteration in the quality of the blood, recognizable by its external characters, but in its essential nature not yet fully understood." Typhus fever he describes as "an acute febrile disease, very contagious, characterized by severe general symptoms, especially on the part of the nervous system, and by a copious exanthematic eruption, but in which the clinical and anatomical signs of enteric complication are absent."

Typhoid fever seems to be one of the diseases most frequently met with in Europe. The author estimates that in the large cities it makes up about one-fourth of all the acute diseases, while in the country it frequently prevails as an epidemic. His experience with it is stated as about eleven hundred cases, attended at Zurich, previous to 1858, and of more than four hundred of these he had written reports. Besides these cases he has observed and treated the disease in other parts of Switzerland, in Paris, and in Breslau.

Upon the pathological anatomy of the disease, the author is full and precise, and reference is made to his great work for the illustrations of the lesions. Into the particulars of this subject, we will not at present follow him, but quote below his remarks upon the condition of the blood, which are valuable, and show his appreciation of the anatomical and pathological schools of pathology. He introduces this extract with the statement that while few diseases have been of late so laboriously and patiently investigated in regard to this point, yet there are also few in which so much

still remains to be done, and he is convinced that it is impossible to arrive at satisfactory pathological conclusions, from anatomical investigation alone.

"By far the most important but least known pathological changes of abdominal typhus, are those of the blood. When taken from a vein during life, we find a soft clot, which is but seldom covered with a thin, buffy coat, similar to congealed fat, and the longer the disease has lasted the smaller will be the relative proportion of clot, on account of the increased consumption of the red corpuscles. The quantity of fibrin is either decreased or normal; the colourless corpuscles are said to be more numerous, but my own microscopic researches on the blood have not led me to any definite results. The serum is lessened with every day's duration of the disease, and, indeed, in proportion to the amount of intestinal affection and of evacuation through the enteric mucous membrane. Salts and extractive matters are rather relatively increased than absolutely diminished in quantity. The imbibition of the endocardium, and of the larger vessels, the softness of the clot, with but small quantity of soft and yellow fibrin, indicate plainly most important changes. When we further consider, that a pathogenetic miasmatic agent is acting from without, before the stage of localization has been reached—that according to the investigations of Frerichs and of the analyses of Neukom made in my clinic, leucine and tyrocine, products of the fermentation of the albuminoid bodies, are found in the liver, spleen, mesenteric glands, and even in the urine—that the increased amount of urea in this secretion indicates increased waste of the proteinaceous compounds—that decrease of its chloride of soda and increase of its ammonia, and the continual loss of albuminates by the alvine evacuations, could not certainly take place without the deepest changes in the quality of the blood—we cannot escape the conviction that wholly different modifications must have taken place, than such as can be expressed by the consideration alone of the coagulable, the cellular, the chemical, or the serous constituents of the blood. Farther investigation, however, brings us directly to complex problems, for it is not merely analyses of the blood at different periods of the disease which are needed, but the primitive alterations must be distinguished from the secondary ones, the result of draining of fluids, of the influence of zymosis, complications, consequences, &c. When now we call to mind the fact that our knowledge in regard to the normal constitution of the blood, and especially of the origin and changes of its organizable constituents, is extremely imperfect, our skepticism as to the assumptions of anatomy and of chemistry is certainly justified. It appears to me always judicious to place beside our positive acquirements our great positive ignorance."

The subject of symptomatology follows pathological anatomy, and in this is first given a general description of the disease from its initial stage to the termination. Then are taken up the most important symptoms *seriatim*, and each is examined at length. From these we select a few points of more especial interest:—

"Towards the end of the first week, sometimes in the second, *roseola* makes its appearance. The spots are of a pale red colour, about the size of a lentil, but little elevated above the surface, disappearing upon pressure. They are first seen on the lower part of the chest, and on the abdomen; afterwards they spread over the thorax, abdomen, and back. They may be present in but limited number, or may be very numerous. I have often seen them of late years so profuse as to resemble an eruption of measles. I have never seen them upon the face, and only exceptionally on the extremities. * * * They are more likely to be wanting in persons of dark-coloured skin than in those of clear and delicate complexion. In the year 1857 particularly, I observed as profuse an eruption in ileo-typhus as is ever seen in the exanthematic typhus, which once more speaks against a too rigid separation of the two diseases. In the not numerous cases of relapse, in the course of the same attack, I have many times seen the second *roseola* far more intense than the first."

"In the beginning of typhus the *temperature* is always increased. If we

must take the mean temperature of middle age (20-40 years) at 37° centigrade the increase will range from $0.5\text{--}2.5^{\circ}$ in cases of medium, to $2.5\text{--}4^{\circ}$ or even 4.5° in cases of greater intensity. An elevation of temperature above 41.5° has not been observed. This abnormal height of temperature continues a definite time, so that in the remission it never falls below 38° or 38.5° ; then it sinks, either suddenly in the course of twenty-four hours, or in the remission to the normal point, or below it, and in the evacuations seldom again goes above $38^{\circ}\text{--}38.5^{\circ}$. * * * The first continuous and increasing moderation of temperature corresponds to the so-called critical occurrences, increase of perspiration and of urine, the period of rapid and definite decrease of all the symptoms, and which leads to convalescence, while complications and consecutive diseases, as well as great irregularities as to course, have as a consequence an increase of the temperature. A rapid decrease of temperature is often occasioned by intestinal and other hemorrhage. A rapid and suddenly-commencing increase of temperature during a late stage of the complaint often indicates the beginning of a severe consecutive disease. Therefore, accurate observations of the temperature are of great prognostic value, and even in private practice the careful physician should carry with him a thermometer as well as a lancet and a stethoscope. * * * I have not been able to detect any definite critical days in typhus."

"Having learned the value of the thermometer, we may call the careful observation of the *pulse* our barometer in prognosis, and with every year I estimate more and more highly the doctrine of the pulse as it was taught by the older physicians. As a general rule the pulse is frequent from the beginning, and its rate is still farther increased by exertion, or the upright position. It corresponds generally with the temperature: in middle age at the commencement ranges from 92-96-104-116-120 in the minute; in children it is more frequent the younger they are, and I have seen it in patients from three to five years of age as high as 140 or 150 without unfavourable prognostic signification. In adults a pulse continuing at and above 120 from the beginning is of serious import. Between morning and evening there is a difference of eight to twelve beats, or even more. Although in general the frequency of the pulse follows the temperature, yet I have many times seen a burning hot skin with only moderate increase of pulse-rate. With diminution of temperature, either suddenly or gradually, the pulse declines also, yet very frequently during convalescence, a pulse of 100-120 is seen without proportional increase of temperature, and this not only in weak and greatly reduced patients, but in stronger ones. If, in the second period, the pulse reaches 128-140, or above that, and so continues several days, the case will terminate fatally as a general rule.

"The quality of the pulse is no less important. Only immediately in the beginning is it really full and strong, then it is full and soft, and after five or eight days it is less full, and easily compressible. This peculiar weakness of the pulse becomes more and more marked towards the end of the first, and in the course of the second period: indeed, there is something peculiar to the experienced physician about the pulse of typhus which is not easily describable. In the further course of the disease it becomes more or less undulating, and from this condition to the dicrotous pulse, it passes through all variations. The more compressible, the weaker, the smaller the pulse, the severer is the case: generally, also, such a pulse is frequent, but I have observed exceptions to this. A bad quality of the pulse is that in which the pulsations can no longer be distinguished, and this, as well as irregular contractions of the arteries, are so much the worse, since it is not here merely a question of weakness of the heart, but of fatty infiltration of its muscular structure."

"The disturbances of the intestinal functions manifest great variety, as has already been seen by the description of the *diarrhoea*. Above all, cases are not infrequent in which there is constipation or only temporary diarrhoea, even too in cases which terminate fatally and in which the evidences of intense intestinal disease are found. Although in many cases the diarrhoea is present from the beginning, yet during the first four or five days there is rather constipation. The diarrhoea begins generally in the second half of the first week—sometimes only about the eighth or tenth day. As a rule, there are from two to four liquid

stools in twenty-four hours, not seldom the patient will have many more, even to six or eight in the same period of time: only exceptionally are the passages accompanied by colic pains; nor does the diarrhoea maintain any direct relation to the ileo-caecal pain, or to the meteorism of the abdomen, which is often very considerable. If, after it has ceased, it commences again with considerable intensity and obstinacy, it indicates some consecutive disease, as diphtheritic inflammation of the large intestines, or persistent catarrh of the small intestines with lack of reparation. * * * * After small and large doses of calomel the stools of typhus become green. This green colour does not depend upon the mechanical mixture of sulphur of mercury, which is found at the bottom of the vessel after large doses of this medicine, but depends upon a peculiar transformation of the brown pigment of the bile into green, since brown bile changes to emerald green when rubbed with a small quantity of calomel. The examination of the stools gives nothing definite as to an increase of biliary secretion. Albumen is only found in the evacuations of typhus when blood is present."

"Among the worst complications of typhus must be reckoned *perforation* of the intestines, which, according to Heschl, favours the fatal termination in about four to five per cent., a proportion which appears to me too high in reference to the total mortality, since with us, at the highest, only one to two per cent. die of perforation. But if we compare the frequency of perforation with the fatal cases of typhus in general this proportion is below the truth. I have found, for instance, in one hundred *post-mortem* examinations of ileo-typhus no less than nine cases in which perforation had taken place, and these were proportionally divided among my cases at Paris and Zurich, so that 8 to 10 per cent. of deaths are caused by perforation. * * * Generally it occasions a rapidly fatal peritonitis. The patient experiences a sensation of internal tearing. Immediately there are developed intense abdominal pain with great distension, the most extreme sensibility of the abdomen to pressure, nausea, vomiting of greenish fluid, constipation, a small, thready, rapid pulse, a pointed tongue, and these symptoms usually terminate in death within twelve or thirty-six hours. These symptoms sometimes occur entirely unexpectedly, even in apparently mild cases in which the patient scarcely keeps his bed, and which have been therefore called ambulatory typhus. To this typical form must be added, however, a more lingering kind of perforative peritonitis. The beginning may be far less sudden, which may depend upon the adhesions of which I have met with examples, or upon the deep stupor of the patient. I have certainly seen the perforative peritonitis last from ten to fourteen days in several cases, and since in these cases several perforations were found, the last which occurred might have decided the fatal termination. Once I found the bowel full of holes from perforations. The gall-bladder may also suffer this accident and occasion fatal peritonitis."

In the eighteen pages occupied with the subject of symptomatology there is much besides these extracts which is well worthy of presentation, but we are compelled to deny ourselves the gratification of drawing further from the rich stores of the author's experience, and pass on to the course of the disease, its different forms and complications. Much of this, too, we should like to give in full, but must content ourselves with indicating very briefly the varieties of the disease he recognizes, and which, he says, run into each other. They are: 1, an almost *latent* form, sometimes very deceptive, patients being brought into the hospital even from their work dying from perforation; 2, a *versatile* form; very changeable; *syn. febris nervosa versatilis Frankii*; 3, a *mild* but *regular* form; 4, the *cerebral* typhus, in which the head symptoms predominate, but which must not be considered as depending upon a local inflammation; 5, an *adynamic* form, with great prostration of power, etc.; 6, a form in which the chest symptoms predominate, the so-called *broncho-typhus*; 7, in which the abdominal symptoms predominate, which may be appropriately termed the *enteric* form,

more frequent in children; 8, the *hemorrhagic-septic* variety, formerly called *febris nervosa putrida* or *maligna*.

His statistics in regard to the *mortality* of typhus are valuable; he has been careful in the investigation of this point in the practice of others, esteeming it of great importance, and has his own large experience to draw from; we therefore give it entire:—

"The mortality is subject to great variations according to the epidemic, season, and locality. Above all, it is important in considering this point to reject those inexact statistics not infrequently seen in the too favourable reports of vain-glorious country physicians. I have seen all proportions of mortality in different countries, from thirty down to twelve per cent. The greatest mortality was about one-fourth and took place in Chomel's wards of the Hôtel Dieu, during the years 1834-5. The strictly collected statistics of Bouillaud, in 1835, give one-sixth fatal cases. In the year 1835, Piedagnel published statistics of the treatment with cathartics, which showed a loss of one patient in seven: in the same year the mortality at La Pitié, under the expectant treatment by Louis, was one in nine: in the mean time, I recollect very distinctly of seeing at that time many mild and abortive cases in La Pitié, while in the Hôtel Dieu and at La Charité almost all were severe cases. In the former the treatment consisted in the administration of chlorine and the chlorates, while in the latter of full bleedings. In the severe epidemic which I observed in Unterwallis, in the year 1839, the mortality upon the St. Bernard was one-third, while in the Salvent valley it amounted to scarcely one-tenth. My observations at Zurich, extending over a period of five years, was of particular interest in reference to this point. During this time I had under my care 1044 cases of typhus and abortive typhus (549 men and 495 women); of these 226 terminated fatally—about 11 per cent. Now if we deduct the abortive cases there remain 799, 419 males, 380 females, with a mortality of 126, thus about 15.7 per cent., not quite one-seventh, but which is not equally divided between the sexes. There are, for instance, more than 3 per cent. less of fatal cases among the males than among the females. This agrees with my very extensive observation generally in Zurich, that females do not withstand severe acute diseases so well as males, and I observed the same thing there in regard to smallpox and cholera. The general proportion of our statistics is so much the more favourable since the abortive cases are excluded, while in others they are termed mild cases and included: and again, the number of severe cases was large, many of the patients having been brought into the hospital near their end from perforation, etc., and four cases of death occurred from cholera."

We pass over all intervening points, and come to the subject of treatment, which he introduces with the following admirable paragraph; we transcribe it, because it gives a good general idea of his opinions, and illustrates his candour and his judgment.

"Coming now to the treatment of typhus, we find in our science a great number of methods recommended, and some of them quite celebrated. Although we shall hereafter show that, after many trials, we have not been able to adopt any especial method of treating this disease, yet experience and the study of the best works upon the subject have brought us to the conviction that we should not allow ourselves to be too exclusive upon any point. When we see, for example, that in the therapeiae of the best German, French, English, and American authors there are not only considerable and important discrepancies as to detail, but fundamental differences, we cannot content ourselves with the indefinite saying that of the many roads all lead to Rome at last. When we read carefully the description of different epidemics, and study their general picture of the disease, we find that considerable modifications of treatment were necessary, not merely according to the doctrines of schools, but according to the seasons, countries, and localities. But we also find that this general study and comparison not merely show to the physician these varieties, but they help him to the

knowledge of many means and methods which, judiciously managed, multiply his resources, heighten his efficiency, and increase his usefulness. This is not an eclecticism which forms of many-coloured and many-shaped pieces brought from every direction, a variegated and discordant whole, but we arrive thus at that profundity of judgment which enables us to weigh and estimate the various and earnest efforts of the best and most experienced members of our profession, even as the truly great tactician does not rely alone upon the inspiration of the moment, but finds in a thorough study of the masters of his art in antiquity, in the Middle Ages, and in modern times, rich resources for the most difficult positions. Diggessions of this kind will perhaps excite in the minds of many the question whether they should find a place in the narrow limits of a hand-book. But I hold it essential, in theoretical instruction as well as in the clinic by the bedside of the sick, to lay down for the student and the young practitioner, those sound and tried principles which can alone give light, clearness, and connection to the numerous varieties of detail which are inseparable from our art."

The subject of treatment is opened with a critical examination of the different methods which have been proposed in this disease. First are the plans for cutting it short in the beginning, the abortive treatment; his views upon this every one will readily anticipate. What reliance can be placed upon remedies cutting short a disease which in one-fifth of all the cases terminates spontaneously within a brief period? He thinks that by the establishment of the existence of abortive typhus the doctrine of abortive treatment is shaken to its foundations. However, he states that the measures relied upon to produce this effect—emetics and calomel in large doses—have no influence upon the course of abortive typhus. The former of these he has tried many times, both by ipecac and a mixture of this with antimony; but the conviction was forced upon his mind that they were useless; also many cases were brought into the hospital in which emetics had been tried by others, but without decided result. When the emetics used are antimonials, they not unfrequently increase the intestinal troubles, but he thinks it may be said of this plan generally that it is harmless.

The treatment with calomel is one which has received the countenance of eminent authority in Germany; it was the favourite plan of the author's preceptor, Schönlein. The medicine is to be given in full doses—to adults, gr. vj-x, to children, gr. iij-v—three times daily, and this plan must not, therefore, be confounded with a milder mercurial course, not *abortive* in its intention, to be alluded to farther hereafter. To this plan the author has the same plea as to the other, and which he deems unanswerable—his doctrine of *abortive typhus*. It is based on statistics, very favourable statistics, too,¹ but in compiling these no account was taken of the large number of cases which would have terminated abortively without the remedy, therefore they are valueless, and the doctrine is left without support.

Passing on to consider special modes of treating typhus (*not* abortive measures), he begins with the antiphlogistic plan, which was taught and practised by Broussais and Bouillaud, and Forget of Strasburg, and in a modified degree by Chomel and Louis. There have ever been fanatical devotees of the lancet, our author tells us, and it is not surprising, therefore, that men have been found to take from five to eight pounds of blood from patients with typhoid fever, by rapidly repeated venesectiions and local bleedings. In order to satisfy himself of the real value of this mode of treatment, the author states that in 1835 he collected a series of clinical reports of cases in Bouillaud's wards, and convinced himself that "it is not so

¹ For those of Tauflieb, which are the most extensive, see Stillé's Therapeutics and Materia Medica, vol. ii. pp. 812, 813.

dangerous as at first sight it might appear to be; the mortality ranged about one-sixth; nevertheless the patients were generally very much reduced, and convalescence was extremely prolonged." His own opinion is that venesection in typhoid fever, as a general rule, is neither necessary nor useful. In cases attended with active congestion of the lungs or brain, or in some other exceptional cases, he would take blood by moderate general bleeding or by local measures.

The treatment by *mercurials in small or moderate doses* comes next in order, and is quite a favourite plan with the author. As the foundation or basis of treatment (*Grundbehandlung*), he looks upon it as one of the best.

"I have used it extensively in Paris and in Switzerland, and the cases so treated seemed to me generally to run their course mildly and favourably. I resort to it especially in children. I administer simply one grain of calomel with sugar, morning and evening, from the beginning of the disease. This method is not new, and has already been used by so many physicians, that we cannot but wonder that a man so celebrated as Serres should claim before the Paris Institute, in 1847, that he had discovered in mercury a specific remedy for typhus, as it acted as such upon the intestinal eruption, which was similar to variola; wherein he makes a double error, since the analogy of the typhoid intestinal affections to smallpox, and the specific action of mercury upon it are both equally hypothetical. Serres particularly recommended, in addition to inunctions with the mercurial ointment, the hydrargyrum sulph. nig., gr. x- $\frac{1}{2}$ j daily, in several divided doses. Beequerel has also spoken very favourably of this method. The Philadelphia physician, Wood, is unquestionably one of the most judicious supporters of the mercurial plan."

Here follows Wood's plan in full, the circumstances and period of disease in which it is resorted to, with his formula. To this he adds "it should, however, be observed, that according to the description of the author, the inflammatory character of the disease appears to be more marked than with us."

The Italian contra-stimulating plan receives a passing notice, and the next in order is the *antiseptic* plan. Throughout the whole history of typhus, our author says, there is ever present the idea of a putrescence or putrefying agent, which is to be neutralized or destroyed, a doctrine which, whatever modicum of truth it may possess, he thinks has sadly retarded our progress in knowledge of the disease. This plan consists in administering chlorine water freely, and in regard to its value the profession in Germany seems very much divided. Taking the reports of its friends, our author concludes that it is more febrifuge than antiseptic in its operation. His own observation is that chlorine water is neither particularly beneficial nor injurious. He mentions the fact that some French physicians are partial to the use of the chlorates, but gives us no opinion of their value.

The treatment by *tonics*, combined with acids and stimulants, is one which has enjoyed the favour of many learned men. However well adapted to single exceptional cases, as a general treatment, or as the base of operations, to use a military phrase, he rejects it entirely. The clinical reports of some of its friends, he thinks extremely unfortunate for it—in almost half the cases there is a *post-mortem!* We regret exceedingly that the doctrines of Todd do not here receive a more particular notice.

The author gives, as supporters of the treatment by *cathartics*, the names of Tissot, Stoll, Pringle, Huxham, and Baglivi, and some of the best Parisian physicians, among the more modern ones, Honoré, Beau, Piedagnel, Jadoux, Andral, and Louis, with others; an array of names which should

certainly carry weight in a question of therapeutics. We limit ourselves to his own experience with the plan :—

"I have experimented with this plan a good deal, and have been generally satisfied with the results. I prescribed every day, or every other day, a glass of Seidlitz water or of the solution of citrate of magnesia, to be taken in the morning fasting; or I order morning and evening from one to two grains of calomel. In general the diarrhoea is scarcely at all increased; if this should be the case, the treatment is discontinued. However injurious energetic cathartics, such as the neutral salts in large doses, drastics, etc., may be in a disease in which the bowels are so deeply implicated, mild and gentle purgatives form, nevertheless, a good method of treatment, which in France gave an average mortality of one-seventh. Since, however, my results in Zurich with an expectant-symptomatic treatment were rather more favourable, while the abortive cases were excluded from my statistics, I see no reason to prefer it. Meantime I repeat that, particularly in typhus, different methods of treatment may be necessary, according to the circumstances, and, therefore, I look upon the cathartic treatment as the best method of an active character."

The treatment with acetate of lead, of Dr. Atlee, of Lancaster, as given by Wood, receives mention, and this concludes the examination of special plans of treatment.

The nature of his own plan, which occupies eight or nine pages of the book, will be gathered from the term "expectant-symptomatic," which he has already applied to it. He lays down carefully the hygienic and dietetic management of the patient, and with this is content, so long as the case is going on regularly and mildly, prescribing nothing more than an emulsion of gum for appearance sake. If, however, special symptoms arise of any severity, or of threatening character, he meets them according to their nature, and inculcates the most careful observation of the patient, in anticipation of their occurrence.

"In this careful oversight and watching, the physician resembles the shepherd, who does not interfere with his flock so long as they do not stray out of their pasture, but who immediately brings back the stragglers from every direction; and here, too, is the old maxim *obsta principiis* of the greatest importance."

After laying out the treatment in general upon these principles, the individual symptoms of the disease are then taken up in detail, and the appropriate remedies given; of these we can only mention such as seem of especial interest. In the delirium, he is partial to the cold douche to the head, the patient being in a warm sitz-bath, the remedy to be repeated several times daily, and continued some minutes. When the time for tonics has arrived, the preparations of bark "occupy the first rank, and to the use of these in typhus, physicians have returned again and again, for centuries." To these succeeds wine, and in case the best quality of this cannot be procured, rum is spoken of as a substitute, but brandy, so generally used with us, he does not mention. Equal in rank with wine he places coffee, "the tonic and stimulating properties of which are not, in general, sufficiently esteemed in therapeutics." * * * Under the same conditions which call for tonics and stimulants the oil of turpentine is especially recommended by Wood, upon whose judgment I place a very high estimate. * * * It is recommended after an experience of thirty years, and Wood, whom I know personally, belongs unquestionably to the most conscientious and best physicians of our time." In the hemorrhagic and septic forms of the disease he recommends the preparations of bark with the mineral acids, and in collapse the various ethers. Camphor, musk, arnica, and serpentaria he has found of very little use, except the former, sometimes in children. For abdominal

pain and tenderness, he prescribes from six to eight leeches, or, in case of local peritonitis mercurial inundation, or, if no inflammatory symptoms are present, sedative liniments with warm fomentations, or the "very comforting but too much neglected" lukewarm baths. With the diarrhoea he does not interfere if it does not exceed three or four evacuations in twenty-four hours; when necessary to treat it, he knows no better remedy than the nitrate of silver—from two to four pills daily, each containing gr. ss; if still unchecked, he adds an enema of gr. iij–iv of the salt, with gtt xij–xv of laudanum in four ounces of water. Next in value stands acetate of lead and then alum; the latter he found especially beneficial in an epidemic, in which nitrate of silver proved useless. These are, of course, but a few of the points; much of the remainder, as well as the general course of management, is in accordance with the treatment of judicious physicians everywhere, and many details are of minor importance; all of it bears the marks of the experienced and conscientious observer.

"In concluding what I have to say upon the symptomatic treatment, I cheerfully acknowledge the great imperfection of my labours, yet I may hope, at least, to have shown that only by a careful observation, and just estimate of all the occurrences of abdominal typhus, can the majority of cases be conducted to a favourable termination. But we are not merely concerned with the rescue of our patients from death; it is our duty to cure them as rapidly and as perfectly as possible, and those statistics which only include the proportionate mortality, are in the highest degree unsatisfactory."

A chapter follows upon typhus in children, and then the true typhus (*anentericus, exanthematicus*) is taken up, and considered in full upon every point. Into an examination of this we shall not go, because the author confesses that his personal observation of it has been limited, and that he derives his knowledge of the disease mostly from others, and states that the best general descriptions of it with which he is acquainted are those of Wood and Griesinger.

We should be glad to enter at length upon the subject of *pneumonia* as given in this work, because it is a disease in regard to which the author has much to tell us from his own experience, and because of its importance, and of the interest which attaches to it as the chosen ground of contest between the advocates of widely different modes of treatment. We can do no more, however, than briefly touch upon a few of the most interesting points.

In frequency, we are told, this disease stands next to typhus; according to Vienna statistics, it forms three per cent. of all diseases, and 3.8 per cent. of all deaths, children excluded. According to the author's statistics, it forms something over four per cent. of all diseases, but only $\frac{3}{4}$ of one per cent. of the total mortality.

The author's statistics are given as 222 cases, seen and recorded, from 1853 to 1858. Besides these cases, he has observed the disease during twenty years of private practice previously, and in a large field of public and private practice since.

He lays great stress upon distinguishing between different forms of the disease, and this in every respect; he considers separately the pneumonia of children and of the aged, and it must be understood that these are not included in that portion of the work under consideration; idiopathic, inflammatory pneumonia is taken as the type, and to this we confine our remarks; as variations from this, he recognizes, besides some minor

departures from the standard in regard to course, bilious pneumonia, then the typhoid form, which may derive its character either from epidemic influence or from the constitution of the patient; then intermittent, or as he thinks it should be, remittent pneumonia; and, lastly, the secondary form, a recognition of which in regard to progress and treatment is of the utmost importance.

As to the etiological relation between pneumonia and phthisis he says:—

“Whether pneumonia develops tubercularization in cases where there is predisposition thereto, is possible, even probable, but not proved. When we see upon how weak a foundation the catarrhal or inflammatory origin of phthisis rests, we cannot but be astonished to hear this entirely unproved doctrine repeated from so many sides in an age which lays so much claim to precision as does ours.”

The influence of sex upon the occurrence of the disease is surprising; of his 222 recorded cases 155 were males and 67 females. This preponderance of pneumonia in the male sex would seem to find its explanation in the different nature of the occupation of the two sexes; thus in the males only one-sixth of the cases occurred in those leading sedentary lives within doors; while again in one year the proportion was changed, there having been 19 cases of the disease in males and 25 in females; this was a year during which a large force of female labourers were at work building a railroad in the vicinity. From these and other facts he is led to dissent from Grisolle, who imputes but little influence to cold as a cause of pneumonia; the author thinks that a succession of exposures frequently perturbing the functions of the skin as important an influence as any single decided operation of this cause, which he admits cannot often be established.

In reference to the *mortality*, it must be remembered that broncho-pneumonia and the disease in children and old persons are not included in the list. Of the 222 cases observed from 1853 to 1857, thirty-two proved fatal; from this he claims a deduction of twenty-one, seventeen because death took place on the day of entrance into the hospital or on the following day, and four because of complication with other diseases, viz., one from delirium tremens, one from empyema, one from suppuration of the thyroid gland, death at the end of three months, and one from cerebro-spinal meningitis.

“Deducting now these 21 cases there remain 201, of which 11 were fatal without complication, and having been regularly treated in the hospital; this gives the extremely favourable proportion of five per cent. for the mortality of genuine idiopathic pneumonia. According to the incompletely analyzed statistics of 1858-9, the result is somewhat more unfavourable--about six per cent. Of the 11 fatal cases no less than six were double pneumonia, and as we treated only 22 cases of double pneumonia during the five years, this gives the enormous mortality of twenty-seven per cent., while for the simple form it sinks below three per cent. * * * Of the 222 cases there were 20 fatal cases among 155 males, thus over one-eighth, almost 13 per cent., and 12 fatal cases among 67 females, thus two-eleveths, or almost 18 per cent., which shows the far greater danger of the disease to the female sex.”

As introductory to the subject of *treatment* the historical sketch of the disease is interesting. By all the older physicians, as Huxham, Stoll, Frank, Richter, and others, other inflammations of the chest were confounded with pneumonia to such an extent as to render their observations valueless. The real history of the disease begins with Laennec, and

besides the discovery of auscultation, which made his name immortal, he contributed much to our knowledge of pneumonia by anatomical researches and the establishment of sound therapeutical principles. Andral followed Laennec in like spirit; then came Bouillaud, who carried the antiphlogistic treatment to excess; the reaction from copious and repeated venesection found its personality in Louis, and, as usual, the reaction passed to the opposite extreme, as he denied all benefit from blood-letting; in the recent scepticism of the Vienna school in regard to this remedy in pneumonia our author finds but a repetition of the views of Louis. Among the later writers on the disease he especially mentions Chomel, Stokes, and Walshe, while Grisolle's monograph is ranked as by far the best. Great credit is given to Skoda for advancing the physical diagnosis, to Rilliet and Barthez for promoting the knowledge of the disease in children, and to Gillette and Durand-Fardel in old age. Dietl, he says, has of late renewed the old question as to whether venesection is of service in pneumonia, and although he has found many adherents, "at present all the best pathologists are agreed as to the value of energetic treatment in the idiopathic pneumonia of persons of good strength and not addicted to strong drink." The treatises of Wunderlich and of Magnus Huss are particularly mentioned as complete expositions of our knowledge upon the subject.

In considering the mortality of the disease, the author lays great stress upon proper treatment, as one of the most important influences not only upon the actual number of deaths, but upon the time during which the patient is laid up with it, and he opens this subject with the following remarks:—

"Several times already we have mentioned the strife which arose concerning the proper treatment of pneumonia consequent upon the teachings of Louis in regard to the usefulness of venesection. Definite doctrines are the more necessary here to the young physician, since it not only concerns the treatment of the disease which, next to typhus, occurs the most frequently, but it furnishes us one of the knottiest points of therapeutical doctrine, upon the one side the contest between nihilismus and rationalism, upon the other experience and truthful observation of nature. I do not hesitate to recommend to the young practitioner those methods of treatment whose safety and usefulness are beyond all doubt. At the same time, it should not be forgotten that for pneumonia there is by no means any specific treatment, as well as that under this name may be placed very various pathological conditions; that according to the age, to the constitution of the patient, according to the character and form of the disease, according to the former condition of the health, to the social and physical surroundings, to its primary or secondary origin, great variations may be observed which must necessarily be taken into consideration when directing the treatment; and to see the profession divide itself into two parties, one of which always treats the disease with and the other without bloodletting, is as unreasonable as what I saw in Paris when a student, every case of cataract depressed at the Hôtel Dieu by Dupuytren, and every case extracted at La Charité by Roux."

After stating that there is a class of cases which are very mild, require little treatment, and may well be left almost alone to nature, he continues upon the general character of the treatment:—

"In individuals extremely reduced, in typhoid pneumonia, with weak, easily compressible pulse, when there is considerable depression, general bloodletting should be omitted. Generally, however, in cases of genuine pneumonia coming on in persons of good constitution, free from the influence of want, malaria, or alcoholic liquors, a moderate antiphlogistic treatment is by far the best.

Grisolle, whose work on the disease will long remain the best, expresses himself to the effect that the expectant treatment, even in mild cases which always recover without aid, is not without disadvantages; while in every case of primitive pneumonia of some intensity a much more energetic treatment is indicated than would appear necessary from the first glance at the general and local symptoms. Yet Grisolle lays down about the same contra-indications to bloodletting as those we have already given, although generally he goes too far. Wunderlich states his experience with venesection to be that it shortens the duration of the disease in proportion to the early period at which it is applied, that by it the critical processes are rendered more perfect, and that in almost all cases it occasions a decided moderation of symptoms, lowers the pulse, and lessens the temperature of the skin, and so shortens the course of the disease; he even maintains that a fatal termination is often directly prevented by this remedy. In a more recent work, Wunderlich has shown that in St. Jacob's Hospital, at Leipsic, the mortality in pneumonia treated by venesection amounted to 6.38 per cent.; those dying when brought in being deducted; while the mortality among those treated without this measure, and those who had suffered no spontaneous loss of blood, amounted to 17.10 per cent. This is a decided difference, and agrees too with our results at Zurich; we have shown above that in genuine pneumonia treated wholly in the hospital our loss averaged only a little over five per cent. I have compared many statistics of pneumonia treated expectantly, and find that in general the proportions are far less favourable than under a more active treatment."

In closing this portion of the subject, however, he says that the decision of such an eminent observer and physician as Hnss, of Sweden, in favour of the expectant treatment of pneumonia must be considered of the utmost significance.

Having given the hygienic measures necessary for a patient suffering with this disease, he proceeds to lay down his own plan of treatment, which brings up again the remedy upon which so much has already been said. He uses it in moderation, to avoid the excess of individual French and English physicians; a single bleeding of $\frac{5}{x}ij$ - xvj as early as possible; yet he does not hesitate to employ it even if six, eight, or ten days have passed, the other conditions being favourable, and he quotes Peter Frank to sustain him in the statement that it is not alone in the beginning of pneumonia that venesection is beneficial. Occasionally he finds a case requiring repetition of the measure, but finds the indication for this not in the buffy coat of the blood, but in the increasing dyspnoea and fever, in a rapidly advancing inflammation, or a plethoric condition of the patient. The general bloodletting he follows up with wet cupping, or uses it instead in some cases where the more severe measure is not necessary, and inunction with mercurial ointment is recommended afterwards.

"According to the observation of my assistant, Dr. Jenni, made in my Zurich clinic, moderation of the temperature, lessening of the fever, and promotion of the crises, cannot be denied for venesection in pneumonia."

Next to bloodletting as a remedy, he ranks tartar emetic, and in this is supported by Laennec, Louis, Andral, Grisolle, Wunderlich, Hnss, and others. He uses it alone in some cases, yet finds from a combination of the two better results than from either alone. He prefers the simple solution to any other form, giving about six grains during twenty-four hours in divided doses. He esteems the evacuations by vomiting or purging, which the medicine sometimes produces, neither necessary nor injurious, "and finds no very positive difference in the results of the cases in which tolerance existed from the first, or was only established after evacuative operation."

This he follows with muriate of ammonia, advises the use of large blisters, and lays down other measures not differing from those ordinarily used.

The treatment of typhoid pneumonia is then given, and consists of, briefly, emetics, cupping, large blisters, and tartar emetic in combination with extract of cinchona. He also gives much prominence to the plan of Gordon, of Dublin, of treating this form of the disease with large doses of quinia. Secondary pneumonia is duly considered, and he closes with a mention of some special plans which have here and there been advocated, as the brandy treatment of Todd, digitalis in large doses by Traube, corrosive sublimate, chloroform inhalations, etc.; some of these, he says, may be made use of in bad cases.

We have taken pains to give his views upon bloodletting at some length, because, after wonderful vicissitudes of fortune during centuries, the remedy is yet upon trial before the profession, and the author's standing, experience, and judgment are such, and the authority he advances to sustain him so eminent, that justice requires they should be taken into account when summing up the evidence in its favour. Before claiming a verdict of "unworthy of confidence," the counsel for the rejection of it must be required to bring in rebutting testimony of equal weight and character.

By this time certainly our readers are enabled to form some judgment of the author and his book. We have endeavoured to show how he handles his subject, and have given some little of his experience, some specimens of his mode of treating disease, perhaps very imperfectly rendered his style, yet have certainly shown the spirit which animated his efforts; it is one of candour, of earnest inquiry for truth, of the utmost desire for the attainment of the great object of our profession—the best mode of curing disease. With thankfulness for the addition he has made to medical literature, with great respect for his learning, with reliance upon his vast experience, and confidence in his judgment, we place his work beside those of the greatest physicians of modern times—we class him with Graves, and Copland, and Simpson, and Rousseau.

J. C. R.

BIBLIOGRAPHICAL NOTICES.

ART. XV.—*The Transactions of the American Medical Association.*
Instituted 1847. Vol. XIV. Philadelphia: 1864. 8vo. pp. 416.

THE present volume comprises the *Transactions of the American Medical Association* for the year 1863. An interval of two years had occurred in the sessions of the Association, caused by the disturbed state of the country.

The volume exhibits a very meagre appearance in respect to bulk, compared with its predecessors, nor is this diminution in size counterbalanced by any very marked increase in the importance and interest of its contents.

The session of 1863 was opened by an Address from Dr. Wilson Jewell, of Philadelphia, Vice-President of the Association, who had been called upon to preside, in consequence of the death, towards the close of 1861, of Dr. E. Ives, the President elect.

The chief topic of the address is hygiene—one, unquestionably, of the most important of the studies connected with the physical well-being of man. Dr. Jewell has not, it is true, struck out any very original views in respect to either of the departments embraced within the legitimate province of hygiene; nor exhibited any great novelty in his plan of treating the subject. His chief aim seems to have been to present some of the leading considerations which should press the study of hygiene—public, domestic, and personal—upon the attention, not of physicians only, but of the members of every enlightened community.

Reports were received from only three of the Standing Committees, namely, on Medical Education, Medical Literature, and Necrology.

The Report on Medical Education, by Dr. Christopher C. Cox, of Maryland, is well drawn up, and the views set forth in it are pertinent and sound.

The reforms in medical education insisted upon in the report, are—1st. The requirement by all physicians of a certificate of suitable preliminary education from every young man before admission to office instruction; the penalty for receiving students without such certificate to be censure by, or expulsion from the medical organizations to which the offender may be amenable. A similar test may be demanded by the schools as a prerequisite to matriculation. In the latter case the certificate showing satisfactorily not only that the applicant has passed through a satisfactory preliminary course of instruction in the classics, and in English Belles Lettres, but also that he possesses an adequate acquaintance with chemistry and physiology; that he has attained the age of nineteen years, and has studied for at least six months in the office of a respectable preceptor. 2d. Improvement in the system of instruction afforded by our medical schools; by (a) an increase in the number of professors; so that each department of the science and practice of healing may be systematically and thoroughly taught. By (b) intrusting the appointment of the professors to a board, which shall comprise a certain number of medical men, uncontrolled or uninfluenced by the faculty. By (c) the establishment of at least three courses of lectures to continue each six months. The first course to comprise anatomy, physiology, chemistry, and the principles of medicine, while the remaining courses embrace the usual branches taught in the schools, including hygiene, medical jurisprudence, and toxicology. By (d) daily examinations by the professor upon his preceding lectures. The class being interrogated by divisions, so that all its members shall be included in the review. By (e) so arranging clinical instruction as to confer equal advantages upon all. By (f) making it obligatory upon the student to attend upon every lecture and clinic, excepting when his absence is the result of some sufficient and unavoidable cause.

Monitors being appointed to note the absent and late, and report weekly to the Dean of the Faculty. Premiums to be awarded to unusual merit, and penalties inflicted for neglect of study or for gross immorality. By (g) the organization of a board of teachers, in connection with the faculty, to superintend under suitable regulations the studies of the pupils during the recess of the lectures—by oral explanations and examinations, chemical manipulations—pharmacy, pathology, and clinical medicine and surgery, and by conversations and discussions upon medical topics. By (h) the appointment, from among the best medical talent of the country, of a board, with an adequate salary, to conduct the final examination of candidates for the doctorate. The examination to be without the presence of the faculty—to be thorough and sufficiently prolonged to allow every branch to receive its proper attention. Whenever practicable, the candidate's knowledge and skill to be tested on the cadaver and at the bedside of the sick.

The scheme of education as above sketched is by no means extravagant or Utopian; and yet we have long been strongly inclined to the belief that instead of attempting the almost hopeless task of regulating the medical schools, the important object of providing for a competent body of physicians could be readily attained by providing for a thorough examination into the character and professional competency of every candidate for the doctorate, by a proper board, placed beyond the suspicion of favouritism from any motive. Let the required qualifications be of the highest grade, and the examinations sufficiently thorough and rigid, and the means for the proper instruction and preparation of the candidates will not be wanting.

The Report on Medical Literature, by Dr. Charles A. Lee, of New York, is throughout replete with good common sense. We hardly think, however, that in practice the "association," suggested by the reporter, would work out effectually the desired end, namely, to promote "the production of original works of a high order of merit by medical writers of our own country," and thus aid the progress of American medical literature. What we want is a greater devotion in the great body of the profession to the study of the higher class of professional works—as well those of "the olden time," as others by later and contemporaneous writers who bring down to our times the results of the constantly onward march of medical thought and observation. Create an increased demand for "original works of a high order of merit," by writers of our own country, and in proportion to the demand will be the supply. What has been already done by American medical writers under discouraging circumstances, may be adduced as an earnest of what would be still better accomplished were the necessary incentive afforded.

The first of the professional papers is on "Diatheses: their Surgical Relations and Effects," by Dr. E. Andrews, Professor of Surgery in the Medical Department of Lind University. The subject is a most important one. The existence of any morbid constitutional tendency or condition by which the course of disease is modified, and the curative or reparative powers of the organism are impaired or perverted, has often, on surgical operations and treatment, an influence of the most disastrous character. The more important of the diatheses in a surgical point of view, discussed by Dr. Andrews, are the *aplastic*, *plastic*, and *hyperplastic*. The first is characterized by a loss of the power of effusing and organizing plastic lymph; the second and third by a tendency in a greater or less degree in all the products of inflammation to the solid form, and by the slowness and difficulty with which suppuration takes place. The normal diathesis exhibits a just medium between the aplastic and hyperplastic. Inflammation produces at first plastic deposits, which subside by resolution or healthy suppuration, according to the severity of the case.

The general causes, according to Dr. Andrews, of the aplastic diathesis are filthiness and over crowding of hospitals, barracks, or tenements, and certain atmospheric or endemic conditions not yet understood. The unstable chemical state of the tissues and fluids of the body in the aplastic diathesis favours certain decompositions, the occurrence of which develops a malignant and irritating poison, commonly called the poison of erysipelas. By clearly understanding the relations of the latter to the aplastic diathesis, the surgeon has at his

command the means of preventing the occurrence in his practice, to a very great extent, of death from traumatic erysipelas, phlebitis, or pyamia.

As signs of the aplastic diathesis, Dr. Andrews enumerates the ready suppuration of slight injuries, the inflammation surrounding them being soft and inclined to a scarlet hue. Phagedenic ulceration, erysipelas, malignant epidemic diseases, he considers to result from a combination with their other elements of the erysipelas virus and the aplastic diathesis.

All surgical accidents and diseases occurring in persons of an aplastic diathesis are liable to be accompanied with unfavourable symptoms. Operations performed in such are seldom attended with prompt and complete success.

The preventive and remedial measures in cases of disease attended with an aplastic diathesis are: 1, pure air and perfect cleanliness; 2, heat, diet; 3, perchloride of iron internally; 4, sulphites internally; 5, bromine locally; 6, iodine locally; 7, mineral acids internally and externally; 8, in malarious cases, quinine.

According to the report before us, it is taught that, while erysipelas is the disease typical of the aplastic diathesis, rheumatism is that of the hyperplastic. Erysipelas and rheumatism are set down, therefore, as opposed to each other, and incapable of existing simultaneously in the same patient. There may be cases, it is true, where a patient affected with one or other of these diseases has been subjected to influences calculated rapidly to reverse his diathesis, in which it is possible for rheumatism to follow erysipelas, or erysipelas rheumatism, before the effects of the original disease have had time to subside. Such instances are rare, and are not examples of a positive complication of the two diseases.

The causes of the hyperplastic diathesis are set down as identical with those of the rheumatic cachexy. They are supposed, probably, to act by producing or retaining an excess of acids in the system, as shown by the excessively acid secretions of the skin, stomach, and kidneys, and by the great difficulty of producing any of the alkaline inflammatory effusions.

"The hyperplastic diathesis is to be diagnosed by considering the following questions: Has the patient now, or habitually, any symptoms of an undoubted rheumatic character? Is the stomach habitually acid? Do slight injuries or abrasions of the skin dry up with an unusual promptness, and with unusual freedom from suppuration? Do eruptions on the surface seem unable to mature pustules? Do such eruptions tend to the squamous form? etc., etc."

In individuals of a hyperplastic diathesis, all cutting operations may be undertaken with the prospect of good success. Incisions readily unite by the first intention, and ulcers cicatrize rapidly. In operations on the veins there need be no fear of pyæmia, and, in general, unless a change of diathesis is produced by bad ventilation or other mismanagement, there will be perfect safety from all aplastic combinations.

"Periostitis and arthritis, in this diathesis, scarcely ever produce necrosis or caries, however severe the inflammation may be. On the other hand, sprains and dislocations produce very unfavourable results. The inflammation set up by the accident partakes of the rheumatic type, and has a true rheumatic persistence and obstinacy. The ligaments are thickened by plastic effusion, and fibrous ankylosis may occur from a similar deposit within the joint, and many months often elapse before recovery takes place from slight sprains."

The treatment of the hyperplastic diathesis is described as being substantially the same as for rheumatism. From the diet and drink of the patient are to be excluded meat, spices, and all alcoholic stimulants. Baths of warm water with soap may be taken. The dress should be warm and dry; muscular exercise moderate. Medication must be varied to suit the case; in principle, however, it must be the same as in rheumatism.

The paper of Dr. Andrews contains many suggestions having an important practical bearing. There is embraced in it, it is true, much that must be considered, as yet, purely hypothetical; still, throughout the views advanced by the author, there runs a vein of unquestionable truth, which should command for the paper of Dr. Andrews a favourable reception; while the doctrines advanced in it should be carefully tested by the results of a series of careful observations.

The next paper is on "The American Method of Treating Joint Diseases and
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Deformities," by Dr. Henry G. Davis, of New York. The main object of this essay is to set forth the superior advantages and success of the author's plan and apparatus for the treatment of various diseases of the joints. The "distinctive principle of these is the procuring to the diseased structures support without pressure, and motion without friction, by the abstraction of the affected joint, by continued elastic extension."

Dr. Davis admits that the general idea upon which his treatment and apparatus for the management of joint affections are based, had suggested itself to other minds before he made his views public. A slight sketch is given of the mode of treating diseases of the joints practised by physicians and surgeons, from the days of Hippocrates to the present time, showing the gradual improvement which has been constantly taking place, and the agency which the medical men of our own country have exercised in their promotion. All the improvements in the method and means of treatment culminate, as Dr. Davis believes, in those presented by him. That his principles of treatment are correct must, we think, be admitted; how far his apparatus is adapted for carrying out those principles in practice must be determined by the results of a more extended experience.

A curious case of diarrhoea adiposa is related by Dr. John H. Griscom, of New York. The case occurred in a soldier, a native of Ireland, 35 years old. He was admitted into the New York Hospital March 3, 1863. Eight years previously the patient, then in the British army at Balaklava, was attacked with chills and fever, previously to recovery from which he suffered from diarrhoea, running into a dysentery, attended with tormina, tenesmus, and bloody stools. He now first noticed a sense of weakness with dull pain across the kidneys, which has continued, more or less, ever since. The dysentery lasted for 12 months, being cured only after his leaving the army and returning to England. Before it left him his feet became edematous, succeeded by a slight ascites. These symptoms were relieved, and he remained pretty well for six months. It was at the commencement of the anasarca that the patient first observed the passage of oil with his feces—sometimes mixed with them, and sometimes by itself. More or less oil has been passed by him ever since. When first taken sick he had severe pain in the right hypochondrium, which has recurred, attended with pain across the abdomen, every winter since. Great tympanitic distension of abdomen occurred occasionally, relieved by a discharge of flatus. Sixteen months before admission had an unusual attack of tympanitis, with pain in right hypochondrium and gripping pains of bowels. Went in consequence into the hospital at Dublin. He was there put upon the use of quinine, and blue mass pushed to a slight salivation, while leeches and a blister were applied over the right hypochondrium. The blister was kept open with blue ointment, for sixteen days, and discharged very freely. He was ordered to take six ounces of whiskey daily, with porter. He was advised to continue always the whiskey, as it was observed that under its use the discharge of oil was diminished, often entirely suspended. Of the use of whiskey he had been deprived for about two months previously to his admission into the New York hospital, he being then in the House of Detention, where he was confined by the U. S. authorities as a witness. He generally passes from two to four stools a day, which are often copious, light, almost clay-coloured, and generally of fair consistence. Has never been able to retain his stools, when the desire to void them comes on. The oil is never intimately mixed with the feces; it often drops from him involuntarily. More of it is passed in winter, during which season the patient is never so well; has headache, pain of bowels and right hypochondrium. He feels cold when he does not take liquor—feet always cold. Never noticed anything unusual about his urine. Thinks his stools are of a darker colour when he takes liquor. During the two months that he has been deprived of liquor has passed more oil than usual. Never tried the effects of diet. Has always a good appetite. Had a chancre twenty years ago.

On admission patient found to be well developed; of a perfectly healthy appearance; good complexion; tongue slightly coated with a whitish fur; appetite good; bowels free; copious stools of a light yellow colour, fair consistence, and containing oil. Pulse 76, and good; pain in right hypochondrium; a feeling of

weakness, especially across the kidneys—complains of palpitation and shortness of breath after exercise or running up stairs. Has lost some flesh. Absence of nervous symptoms. Nothing abnormal in heart and lungs detected by physical examination. Liver slightly enlarged. About two inches below xyphoid cartilage there is a ventral hernia, forming a small tumour one and a half inches in diameter. No albumen or casts in urine. The oily matter of stools is soluble in ether, melts with slight heat, loses its feculent odour, and leaves a greasy stain. Under the microscope it is seen to consist of oil globules simply. The average amount of oil passed daily is estimated at about two and a half ounces.

On admission the patient was put upon the use of the mixture of iron and cinchonia; half an ounce three times a day. On the fourth day had passed since admission six ounces of oil. In place of mixture as above he was ordered *fer. et quin. cit.*, ten grains three times a day. On the 13th day, patient felt stronger—continued to pass oil. Treatment continued, with the addition of 6 oz. of whiskey, daily. During the subsequent eight days oil was passed only once, about two ounces. Stools which were clay-coloured had become darker, owing probably to the iron taken. They amounted to two in the twenty-four hours. Patient felt much better. For a week was without pain in head or side; is gaining flesh. Ordered a diet free from oleaginous matter, which, however, could not be strictly carried out. By the 25th day patient still improving: five days previously had passed a little oil. The entry, twenty days later, is that, having been appointed nurse in another ward, the patient had omitted his daily dose of whiskey; commenced the day previously to again pass oil. Is weaker, which, he says, is always the case when voiding oil. The ensuing day the patient reported himself as pretty well and quite strong—very much better than on admission. Was discharged relieved. When absent from the hospital, in attendance on court, he confessed to having indulged pretty freely in liquor, at times, to the extent of commencing intoxication.

Attached to the history of this case is an analysis, in tabular form, of twenty-four other cases of diarrhoea adiposa found upon record. Of these cases fourteen died; in three the result is not given; seven are stated to have recovered entirely, or been so far improved as to suffer no inconvenience from the symptom. Among the fourteen fatal cases, eight were found to have diseased pancreas; four were not examined after death. This result of the *post-mortem* examinations would seem to confirm the views of Dr. Bernard in respect to the office of the pancreatic fluid in the digestion of the oleaginous portions of the ingesta. The most common symptom attendant upon these cases is, deficiency of bile, as indicated by jaundice, or clay-coloured stools, or both.

"As the sum of the matter, derived from the consideration of the reported cases," remarks Dr. Griscom, "diarrhoea adiposa appears to be associated with a great variety of conditions of body, differing considerably from each other, and it sometimes appears to be unconnected with any other very marked evidence of disorder of the general system, or of any of its parts. In the case just reported, the interesting fact of the amount of oil evacuated being controlled by the exhibition of a moderate amount of alcoholic stimulants, would seem to indicate that the producing lesion was somewhere in the assimilating function; but admitting this, the question is still unanswered as to the precise organ or part of the function involved."

The report on American Medical Necrology, which follows, is from the pen of Dr. C. C. Cox, Surgeon U. S. Volunteers. Though confessedly incomplete, it furnishes nevertheless the basis of a very interesting record, which we regret had not been earlier commenced, of the names, birth-places, fields of labour, contributions to the common fund of medical knowledge, and the time of death of the departed members of the American medical profession.

The next paper is by Dr. Samuel R. Percy, Professor of Materia Medica and Therapeutics in the New York Medical College; being the Essay to which the Association awarded the gold medal for 1863. Its subject is an inquiry into the physiological and medicinal properties of veratrum viride: together with some physiological and chemical observations upon the alkaloid veratria obtained from this and other species. The essay is an able one. The therapeutic action of the veratrum viride is more carefully analyzed, and estimated with greater cau-

tion than has been done by most of the recent writers on the article. Though probably its remedial powers are still rated too highly by Dr. Percy, he has not, with too many of its eulogists, run into the extreme of ranking it as a specific in all cases of fever and inflammation; as an agent capable of fulfilling by itself all the curative indications heretofore intrusted to the lancet, cups, antimony, etc.

The essay is divided into six sections. The first describes the natural history of *veratrum viride*; the second, its chemistry and pharmacy; the third, its physiological action on animals; the fourth, its therapeutic applications, under four heads: 1st, its general therapeutic application, with the relation of a few cases in point; 2d, its therapeutic application in typhus and typhoid fevers, and in phthisis: also, as a means of diagnosis in diseases of the lungs and heart; 3d, the therapeutic application of its resinoid; and 4th, a general synopsis of the therapeutic qualities of the alkaloid veratria derived from the *veratrum viride*. The fifth section is devoted to a summary of the physiological and therapeutic action of *veratrum viride* on man; while the sixth treats of its modus operandi.

The entire essay is deserving of a careful study on the part of every practitioner. It is well adapted to lead to correct views of the true remedial powers of a very powerful and valuable remedy, and of the cases and conditions of disease in which its therapeutical influence is most beneficially exhibited.

The *Transactions* conclude with a short paper on "Laryngoscopic Therapy: or the Medication of the Larynx under Sight," by Dr. Louis Elsberg, Lecturer on Diseases of the Throat in the University of New York, etc. The leading, perhaps we should more properly say, the only object of this paper is to call attention to a set of instruments adapted for the accurate local medication of the larynx under sight. With these instruments, and the laryngoscopic apparatus, we are assured that medicines can be conveyed, in either the solid (powdered or in pencil), liquid, or gaseous state, to the larynx; while we see exactly what we are doing, so that our applications shall be made directly to the diseased surface, however circumscribed, without coming in contact with neighbouring healthy structures.

For an account of Dr. Elsberg's set of instruments we must refer our readers to the volume before us.

The remainder of the volume is occupied with the Plan of Organization of the Association, the Code of Medical Ethics, List of Officers and Permanent Members, and index.

We certainly do not desire that the *imprimatur* of the Association had been withheld from the present volume of *Transactions*; and yet, whatever merit may be accorded to the reports and papers it contains, we should be very sorry to have it received as a fair representation of the learning and talents of the representatives from the State and Local Medical Societies of whom its membership is composed.

D. F. C.

ART. XVI. *Reports of American Hospitals for the Insane:*—

1. *Of the Pennsylvania Hospital for the Insane, for the year 1863.*
 2. *Of the State Lunatic Hospital of Pennsylvania, for the year 1863.*
 3. *Of the Western Pennsylvania Hospital, for the year 1863.*
 4. *Of the U. S. Government Hospital for the Insane, for the fiscal years 1860-61 and 1861-62.*
 5. *Of the Indiana Hospital for the Insane, for the fiscal year 1862-63.*
 6. *Of the Wisconsin Hospital for the Insane, for the fiscal year 1861-62.*
 7. *Of the Iowa Hospital for the Insane, for the years 1862 and 1863.*
 8. *Of the Bloomingdale Asylum for the Insane, for the year 1862.*
 9. *Of the New Jersey State Lunatic Hospital, for the years 1861, 1862, and 1863.*
 10. *Of the Insane Asylum of the State of California, for the fiscal year 1858-59.*
1. The principal medical statistics, for the year 1863, of the *Pennsylvania Hospital for the Insane*, as derived from Dr. Kirkbride's twenty-third annual report, are as follows:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	143	142	285
Admitted in the course of the year	.	96	97	193
Whole number	.	239	239	478
Discharged, including deaths	.	100	93	193
Remaining at the end of the year	.	139	146	285
Of the discharged, there were cured	.	44	44	88
Died	.	19	12	31

"Of these deaths, eight resulted from acute mania; one from chronic mania; three from organic disease (softening) of the brain: two from inflammation of the lungs; one from disease of the heart; three from apoplexy; two from chronic diarrhoea; three from gradual exhaustion, connected with the refusal of food; three from old age; one from suicide; one from delirium tremens, and three from pulmonary consumption."

The subjoined extract from the report exhibits the effect of another year's experience upon the opinions heretofore formed and expressed relative to the general plan upon which this hospital is now conducted:—

"More than four years have now elapsed since the experiment of treating the sexes in separate buildings, with distinct organizations—except the Board of Managers and Physician-in-Chief—was fairly inaugurated. Hoping at no very distant day to present in some detail my opinion of the results already achieved and those likely to be accomplished, it is sufficient now to say that each additional year gives new cause of gratification that the work has been done, and of the soundness of the views which led to the adoption of the plan. In every respect all that was anticipated has thus far been realized. The system has been found to have the advantages that were expected, and none of the disadvantages sometimes suggested."

The means of this hospital for moral treatment, more extensive at the time of the next preceding report than those of any similar institution in the country, were considerably enlarged in the course of the year. "The eighteenth annual course of lectures and evening entertainments was one of unusual interest, and the full number of evenings—two hundred and fifty, being more than three times a week for nine months, at each department—were appropriated to this purpose." A history of these entertainments, and particularly of the progressive improvements of the magic lantern and the pictures exhibited by it—improvements for many of which the world is indebted to W. J. F. Langenheim, of Philadelphia—occupies several pages of this report. Its closing sentence is here quoted: "It is interesting to know that everything under the name of stereopticon, &c., that is now shown to the intelligent audiences which fill some of the largest lecture-rooms in our cities, and which has been so generally commended, was familiar to the patients of this hospital some years before these public exhibitions were commenced."

After an exposition of the importance of walking as a means of physical exercise, Dr. Kirkbride says: "In this connection reference may be made to the system of light gymnastics of Dr. Lewis—undoubtedly the true one for securing safely a proper development of the muscular system—which has just been introduced at the Department for Females, and which it is intended shall be regularly used in the institution.

"No year passes but that a number of ladies are under care who, as school-girls or when more advanced in life, have suffered from the want of proper muscular exercise in the open air. To many of these light gymnastics will be valuable, and in our hospital they will have the advantage of adding another means for passing pleasantly the long evenings of winter. The new game of *croquet* also bids fair to become a valuable addition to our out-door exercises, and being well adapted for ladies, on that account becomes more particularly desirable."

A considerable part of this report is occupied by a detailed narrative of the daily routine of what may be termed the organic machinery of the hospital. Although interesting to the popular reader, this exposition presents nothing of special novelty in a professional point of view.

2. In the course of the year 1863 the *State Lunatic Hospital* of Pennsylvania was improved by the erection of a building for "an out-kitchen and stove-room."

		Men.	Women.	Total.
Patients at the beginning of the year	.	144	123	267
Admitted in course of the year	.	78	56	134
Whole number	.	222	179	401
Discharged, including deaths	.	74	46	120
Remaining at the end of the year	.	148	133	281
Of the discharged, there were cured	.	16	5	21
Died	.	12	11	23

Died of exhaustion of chronic mania, twelve; exhaustion of acute mania, four; paralysis, two; apoplexy, dysentery, epilepsy, softening of the brain, and "disease of the lungs," one each.

"We have been able each year," says Dr. Curwen, "to add to our stock of magic-lantern slides, so that we are able to give exhibitions, with explanatory lectures, on three evenings of each week during seven or eight months of the year."

Aside from some remarks upon the evils of premature removals of patients from the hospital, the remainder of the report is chiefly occupied with subjects of general rather than of professional importance.

3. In his report for 1863, Dr. Reed, of the *Western Pennsylvania Hospital*, says: "At no (other) period since the organization of the Insane Department (at Dixmont) of the hospital have so many patients been under treatment. The wards, containing one hundred and eight rooms, are more than full."

		Men.	Women.	Total.
Patients at the beginning of the year	.	67	47	114
Admitted in course of the year	.	49	39	88
Whole number	.	116	86	202
Discharged, including deaths	.	41	31	72
Remaining at the end of the year	.	75	55	130
Of the discharged, there were cured	.	19	17	36
Died	.	8	3	11

Died of phthisis pulmonalis, three; general paralysis, two; exhaustion of acute mania, two; epilepsy, pneumonia, dropsy, and suicide, one each.

In the table of "supposed causes" of all the cases of insanity admitted since the opening of the hospital, thirteen (eleven men and two women) are attributed to "war excitement." The only remarks relative to the operation of this special agency in the production of mental disorder are the following: "The casualties of the war, pecuniary reverses, the high mental excitements to which communities are liable, as well as many other causes, are combining to increase very largely the number of those needing hospital care and treatment."

The subjoined is taken from the remarks upon moral treatment:—

"The patients were, so far as practicable, employed in various useful ways, and amusements and entertainments were devised to relieve the monotony of hospital life, and to divert their minds from their morbid trains of thought. The magic lantern, billiard and bagatelle tables, concerts, charades, and dancing parties, were brought into requisition, and have not been without good results.

"The female patients in their seclusion have not forgotten their duty to their country, and have contributed a portion of their labour for the benefit of our soldiers, resulting in the manufacture of 491 garments, the material for which was furnished by the Pittsburg Sanitary Committee."

We find nothing in this report which, if heeded and followed by appropriate action, is better calculated than the extract given below to render the hospital a blessing to the people among whom it is situated:—

"In considering the amount and kind of accommodations needed by the insane, a fact well worthy to be remembered is that a large number of those requiring care are persons in moderate circumstances, or those whose daily exertions

can only furnish subsistence for themselves and families. The heavy expenses incurred in defraying the cost of a protracted ailment, requiring special provision for its proper treatment, soon absorb their resources, and the friends are compelled to remove the patient from the hospital or obtain relief by making their first confession of pauperism. This class of persons has not only been self-supporting, but by their labour have added to the wealth of the community and borne their share of the expenses of maintaining the poor. When, however, one of them is stricken with insanity, the friends discover that a previous life of industry and honourable discharge of public and private duties *will not* secure aid from the public authorities, *according to law*, without the patient is constituted a *pauper*: and whatever property has been accumulated by years of labour is confiscated for his support, while the family, none of whom may be a producer, are reduced to extreme want. Such is the charity of our law! On equitable grounds, certainly they have some claim for more consideration at the hands of the commonwealth than those who for a great part of their lives have not produced anything, but have been consuming that which they have not earned.

"I allude to this matter, because I have frequently known of patients having been removed from the hospital prematurely on account of their resources being exhausted, and of others who have been detained at home until the day of cure had passed, because their friends dreaded the day of increasing their expenses or of applying for relief to the public authorities."

4. The reports of the *Government Hospital for the Insane* for the fiscal years ending with the close of June, 1861, and June, 1862, have just reached us, and we learn that they have not been printed for distribution until within the last few weeks. Neither of them is long, and the first is quite brief. But, as this is the hospital specially intended for the insane of the army and the navy, its mere numerical statistics have assumed, since the beginning of the war, a peculiar interest.

		Men.	Women.	Total.
Patients in hospital June 30, 1860	.	106	61	167
Admitted in course of the year	.	64	31	95
Whole number	.	170	92	262
Discharged, including deaths	.	62	20	82
Remaining, June 30, 1861	.	108	72	180
Of those discharged, there were cured	.	40	8	48
Died	.	12	7	19

Of the patients at the beginning of the year, there were from the army 24, from the navy 18. Of those admitted, the number from the army was 24, and from the navy 6. Of the recovered, 19 were from the army, and 10 from the navy. Of those who died, 3 were from the army, and 2 from the navy.

Causes of Death.—"Chronic, organic, or functional degeneration of the brain, irregular in character and extent, 7; the same, with phthisis, 4; the same, with epilepsy, 3; the same, with *paralysie générale*, 1; the same with serous apoplexy, 1; chronic mania, 1; maniacal delirium, 2." "The average duration of mental disease was 9.74 years." "The two cases recorded as maniacal delirium were, at the time of admission, in the very last stages, one of phthisis, and the other of pneumonia, and the propriety of hurrying forward their exhaustion by a journey to the hospital for the insane, was at least doubtful. One lived thirty-six hours, and the other twenty-two days after admission."

This hospital is comparatively new, and there has been a constant annual increase in the number of its admissions; but it is evident that already, at the date of this report, June 30, 1861, the effects of the war had begun to be perceived, for, it is said, "the number admitted during the past three months is just four-fifths of the whole number received during the previous twelve months."

"The army," remarks Dr. Nichols, "has suddenly been increased more than three hundred fold, and the navy trebled. A large proportion of the land forces are men of no little moral and nervous susceptibility, quickly transferred from the quietude, comforts, and sympathies of home, to all the hardships and profound excitements of the camp and field. It would not, therefore, be difficult

to offer a plausible demonstration of the probability that the army and navy alone are likely, for the next year or two, to furnish a full complement of occupants for all our wards."

We pass to a notice of the report for 1861-62.

		Men.	Women.	Total.
Patients in hospital June 30, 1861	.	108	72	180
Admitted in course of the year	.	173	12	185
Whole number	.	281	84	365
Discharged, including deaths	.	134	19	153
Remaining, June 30, 1862	.	147	65	212
Of those discharged, there were cured	.	95	8	103
Died	.	24	10	34

Causes of Death.—"Chronic, organic, or functional degeneration of the brain, irregular in character and extent, 6; the same, with epilepsy, 10; the same, with serous apoplexy, 3; the same, with dysentery, 3; the same, with chorea, 2; the same, with *paralysie générale*, 1; the same, with marasmus, with hæmatemesis, with abscess of brain, with atrophy of heart, with fracture of neck of femur, with exhaustive mania, 1 each; typhoid fever, in a low state of which they were admitted, 3."

Of the patients at the beginning of the year there were from the army,	25	navy,	11
Of the patients admitted	"	"	139,
Of the patients remaining, June 30, 1862	"	"	75,
Of the patients discharged cured	"	"	72,
Of the patients who died	"	"	11,

"We present," says Dr. Nichols, "no table of assigned causes of insanity, because the medical officers of the army, which, it will be seen, furnished three-fourths of the admissions during the year 1861-62, almost uniformly disobey that article of the regulations which requires that a history of the cases' should be sent with insane soldiers: and the person, commonly a soldier, detailed to accompany an insane comrade to the hospital, has usually been as unacquainted with the history of the mental disorder under which his charge laboured, as is a trooper with the past history of the horse that is allotted him by his quartermaster. It is certain that the case is in most instances recent; and we in time learn the leading circumstances of the man's civil history, either from the patient himself or from his relatives."

In our remarks in the last No. (pp. 477 and 478) upon insanity in its relations to the war, as shown by the statistics of the *Government Hospital for the Insane*, there are some typographical errors, which we will take this opportunity to correct.

The last two lines on p. 477, and the first two on p. 478, should read as follows:—

"As early as February, 1862, the monthly number of insane received from the volunteer troops was *fourteen*, or half as many as the number of days. In the seven months next preceding the 1st of February, 1864, the average monthly number *30½*; *i. e.*, 214 volunteers were admitted in 215 days."

5. The printed reports of the *Indiana Hospital for the Insane* have, for several years, contained urgent appeals to the Board of Commissioners, and through them to the State government, for an extension of the buildings adequate to the pressing needs of the people. The appeal having remained unheeded, it is, in the report for the fiscal year ending 1862-63, addressed to the officers of the several counties, and to "the press throughout the State."

		Men.	Women.	Total.
Patients in hospital, October 31, 1862	.	150	148	298
Admitted in course of the year	.	100	99	199
Whole number	.	250	247	497
Discharged, including deaths	.	103	99	202
Remaining, October 31, 1863	.	147	148	295
Of the discharged, there were cured	.	58	49	107
Died	.	9	11	20

Died of pulmonary consumption, 6; exhaustion of acute mania, 4; exhaustion of chronic mania, 3; general paralysis, 2; pneumonia, 2; puerperal mania, 1; erysipelas, 1; suicide, 1.

Of the patients received since the beginning of the rebellion, the assigned cause of the insanity of *forty-one*—28 men, and 13 women—is “war excitement.” This is the largest number attributed to the mentioned source that we have hitherto seen in any hospital report.

It appears from Dr. Woodburn's report that the hospital was obliged to struggle through the year amidst great financial perplexities, owing to the failure of the State legislature to make the customary appropriations. Still, some improvements were made. More than two hundred volumes were added to the library, and a fund of more than two hundred dollars, raised by the sale of ornamental needlework, performed by the patients, was dispensed in the purchase of birds and engravings for the wards, and a harmonium for the chapel.

“The grove at the north of the grounds was early fitted up with seats and other facilities for exercise and enjoyment. Fully sixty per cent. of the aggregate number of patients availed themselves of the privilege of being out of doors nearly half of every day, in pleasant weather. A marked improvement in mental tone, health, cheerfulness, and tractability has been the result.”

6. In his report for the fiscal year 1861-62, of the *Hospital for the Insane* of the State of Wisconsin, Dr. Clement says: “The new wing is now occupied by female patients, the old one being entirely devoted to the males. Our condition is thus greatly improved, as we have a much better classification, and one very neat and quiet ward for each sex.”

		Men.	Women.	Total.
Patients in hospital, October 1, 1861	.	51	52	103
Admitted in course of the year	.	49	40	89
Whole number	.	100	92	192
Discharged, including deaths	.	33	28	61
Remaining, October 1, 1862	.	67	64	131
Of those discharged, there were cured	.			25
Died	.			21

Died of exhaustion from acute mania, 4; exhaustion from chronic mania, 6; consumption, 5; epilepsy 2; old age, general paralysis, apoplexy, and suicide, 1 each.

“It has been a common thing to see fifteen or twenty of our male patients working at once upon some part of our grounds, and by their help we have cultivated a large garden, which will yield us our whole year's supply of vegetables. The females assist largely in the laundry, sewing-room, and kitchen; and for the entertainment of all, we have frequent social gatherings, dances, exhibitions of tableaux, readings, and lectures.”

7. According to Dr. Patterson's report for the years 1862 and 1863, the buildings of the *Iowa Hospital for the Insane* are not yet fully completed. But the demand for accommodations has been so great that it is asserted that, unless the apartments be finished, “many applicants must be refused admission; incurable patients will be obliged to return to their former receptacles, some of them to jails, and others to less comfortable and less safe quarters.”

		Men.	Women.	Total.
Patients in hospital December 1, 1861	.	73	67	140
Admitted in the course of two years	.	131	112	243
Whole number	.	204	179	383
Discharged, including deaths	.	87	80	167
Remaining, December 1, 1863	.	117	99	216
Of the discharged, there were cured	.	46	39	85
Died	.	17	15	32

Among the deaths there was one suicide.

Of the whole number (413) of patients received since the hospital was opened

the insanity of eight is attributed to "war excitement." "From careful observation," remarks Dr. Patterson, "and a review of all the facts in my possession, it seems probable that the civil war has added very little, if at all, to the insane population of the country."

Of the 413 patients admitted, 169 were farmers, and 169, probably all females, were employed in "domestic duties." But it is said in the report, that "probably three-fourths of the adult people in Iowa are connected with agricultural pursuits," and the prevalence of mental disorder among them is thus accounted for:—

"The farmers of Iowa have not yet learned how to live comfortably. Their dwellings are badly constructed, often in low, damp, poorly drained locations, with either no ventilation, or too much. They are badly warmed by direct radiation of heated iron, so that the process of partial roasting and freezing is at once experienced by the same person. Their surroundings are too often unpropitious, their physical comforts and social enjoyments too much neglected. In inclement seasons, amid exposures to cold and rain, their bodies probably receive less care and protection than those of any other class. With abundant supplies at command, their diet is too limited in variety, often unskillfully prepared, and the whole science of gastronomy set at naught. The laboratory, in which are manufactured the life blood and the vital forces, is too often lumbered with ill-assorted, indigestible, badly cooked food.

"The wives and daughters of farmers, during inclement seasons, have fewer comforts connected with out-of-doors life, and less adequate protection from cold and humid air, than the women who live in our towns and cities, and it is probable, taking prairie-farm-life, with all its surroundings, as it exists in Iowa, that the average standard of the vital force in those who live upon farms is below that of those who live in the towns and cities. It must not, however, be inferred from these suggestions that the noble and pleasing pursuits of agriculture favour the production of insanity. The errors of living, and the discomforts alluded to, are not necessarily connected with, and certainly not limited to farm life."

The following extract shows the importance of great discrimination, upon the part of physicians in general practice, in regard to sending insane persons to hospitals:—

"But while early hospital treatment is undoubtedly desirable for nearly all cases of mental derangement, a word of caution is necessary in regard to the too early removal from home of such patients as are so fearfully prostrated, that fatal exhaustion must necessarily follow within a few days after admission. Death at home will, in such cases, be less afflicting to the families and friends of patients than at the hospital; and the vital statistics of the hospital will be more fairly represented. No less than four such cases have been admitted during the last year, all of them sinking under fatal exhaustion during the first eight days after admission."

Some parts of the moral treatment are thus mentioned:—

"Evening musical and social entertainments have been given weekly for our patients, in which attendants and officers join.

"A large stereopticon and dissolving-view apparatus, with oxyhydrogen light, has recently been procured, by means of which the most splendid works of art, both oriental and modern, are exhibited."

In giving place to the subjoined paragraph, it is proper that we should remark that no one is more fully aware of the imperfection of the last national enumeration of the insane than Mr. Kennedy, the Superintendent of the Census, and unquestionably one of the most learned statisticians of the country. He acknowledges its imperfection, claiming only that it is more nearly perfect than most others, and expressing the hope that, in future enumerations, measures will be taken which will insure greater accuracy.

"The United States Census Returns of 1860, so far as they relate to the insane, do not even approximate the truth. No one will suppose that one-half the insane of the State are gathered within these walls; and yet we have a larger number of inmates to-day in this institution than is returned by the census of 1860. But allowing the proportion of insane for Iowa to be only one-half that

of the New England States, and we shall then have at least five hundred insane persons in the State—which does not vary much from the true number."

8. The records of the *Bloomingdale Asylum for the Insane*, for the year 1862, furnish the following statistics:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	73	78	151
Admitted in course of the year	.	68	49	117
Whole number	.	141	127	268
Discharged, including deaths	.	62	49	111
Remaining at the end of the year	.	79	78	157
Of those discharged, there were cured	.	26	22	48
Improved	.	18	6	24
Not improved	.	9	10	19
Died	.	9	11	20
Average number during the year	.			148

"The deaths were attributable to pulmonary disease in six cases; to apoplexy, paralysis, or other diseases of the brain, in eight; to maniacal exhaustion in two; to general decay in two; to disease of the heart in one; and to gangrene of the foot in one."

It appears, from this report, that there is something *sui generis* in the character of the Bloomingdale Hospital which exempts or prevents it from giving to the profession, or the public, any results of its medical history further than those which we have quoted. We were not heretofore aware of any such peculiarity, and when we compare this hospital with the Pennsylvania Hospital for the Insane, the Friends' Asylum, and the McLean Asylum, we must confess, even now, our inability to perceive it.

In the course of the year covered by this report, Dr. Brown visited some of the European hospitals. He gives the following summary of the results of his observations:—

"While I found but a single instance—at the Glasgow Asylum—of the spaciousness which characterizes our modern institutions, and no parallel whatever to the system of steam-warming and mechanical ventilation by a steam-driven fan, now so common among our large asylums, other excellencies were too conspicuous not to impress an American physician with admiration. The asylums of Great Britain were the best I saw in my tour, and in many of these I was most favourably impressed by the minute attention to the fullest comfort of patients; by the marvellous tidiness, tranquillity, and cheerfulness of almost every individual in large county asylums; by the measure of freedom permitted, in all classes of institutions, to large parties who go on long excursions and even make sojourns of several weeks at the seaside, in houses specially hired for the purpose; and by the admirable efforts to render the apartments of patients attractive, and their airing courts real 'pleasure-grounds' by ornamental gardening, a profusion of shrubbery and flowers, and by various devices to encourage open air occupation and exercise."

9. The principal numerical results of the medical operations of the New Jersey State Lunatic Hospital, for the year 1861, are these:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	154	156	310
Admitted in course of the year	.	94	84	178
Whole number	.	248	240	488
Discharged, including deaths	.	83	71	154
Remaining at the end of the year	.	165	169	334
Of those discharged, there were cured	.	44	31	75
Died	.	16	7	23

Died of consumption, 1; exhaustion of chronic insanity, 8; exhaustion of acute mania, 7; apoplexy and congestion of brain, 3; paralysis, 2; epilepsy, 1; pulmonary congestion, 1.

In the course of the year the central building of the hospital was enlarged by the erection of "a very substantial structure of stone, 40 by 65 feet in extent, with a half-octagon projection in front." It is three stories high, the upper one being a chapel, and the lower two apartments for official and domestic purposes.

The former chapel is hereafter to be used for evening entertainments. "With this view a permanent platform or stage, with a curtain and scenery, will form a portion of the fittings, and furnish facilities for tableaux, dialogues, illustrative lectures, &c."

The report for 1862 contains the following statistics:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	165	169	334
Admitted in course of the year	.	82	79	161
Whole number	.	247	248	495
Discharged, including deaths	.	90	80	170
Remaining at the end of the year	.	157	168	325
Of those discharged there were cured	.	48	40	88
Died	.	7	10	17

Died of paralysis, 1; general exhaustion, 1; exhaustion of acute mania, 1; epilepsy, 5; apoplexy, 1; erysipelas of head, 1; consumption, 2; pulmonary abscess, 1.

"A larger number of patients have been treated, and a larger number restored than in any previous year;" and the hospital "is now regarded as in better working order than at any previous period of its existence."

We cheerfully accord to Dr. Buttolph the credit of the following general classification of insanity, the most concisely and perspicuously stated of any with which we have met.

"There are three principal forms of insanity, corresponding to the disturbed state of the three primary classes of the mental faculties, viz., the intellectual faculties, the moral feelings or sentiments, and the animal powers or propensities.

"Based upon these three grand divisions, there is an almost infinite variety of *mixed* forms of mental disorder, depending on the character of the morbid action—whether excited, depressed, or perverted—and the number and combination of the faculties or organs implicated."

We would have omitted the words "or organs." The doctor very properly adds:—

"With this key to the morbid working of the mental faculties, it is not usually difficult to comprehend and explain the many anomalous forms of the disorder that occur to puzzle and perplex the ordinary observer."

The results of the year 1863, as numerically expressed, are these:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	157	168	325
Admitted in course of the year	.	76	88	164
Whole number	.	233	256	489
Discharged, including deaths	.	71	92	163
Remaining, December 31, 1863	.	162	164	326
Of those discharged there were cured	.	26	42	68
Died	.	19	12	31

Deaths from "general or chronic exhaustion of the vital forces," 13; exhaustion of acute mania, 7; general paralysis, 4; consumption, 3; erysipelas of head, 2; apoplexy, 1; congestion of brain, 1.

10. The reports of the *Insane Asylum* of the State of California do not regularly and punctually reach us. We regret this the more because of the peculiar circumstances amid which the state of "the Golden Gate" was peopled, and the subsequent novel phases of psychological condition presented by that heterogeneous, excited, and hastily gathered population.

The report last noticed was for the year 1858; that which is now before us is for 1859.

	Men.	Women.	Total.
Patients in hospital Dec. 1, 1858	225	48	273
Admitted in course of the year	233	43	276
Whole number	458	91	549
Discharge, including elopements and deaths	152	27	179
Remaining December 1, 1859	306	64	370
Discharged	103	21	124
Died	43	6	49

There is no paragraph in the text relating to the causes of death, and no special table upon the subject; but in the general "Exhibit of Patients" we find those causes mentioned in forty-four cases. They are these: Marasmus, 24; epilepsy, 8; consumption, 6; dysentery, 2; acute mania, 2; inflammation of brain, 1; intestinal gangrene, 1. The proportion dying with epilepsy is remarkably large. The same might be said in regard to "marasmus," if that term were as definite in signification as "epilepsy;" but the scope of its meaning is so indeterminate that the reader is but little enlightened by its use. Most of the superintendents of the hospitals have ceased to use it.

As nothing is said in relation to *cures*, we are left to infer that all who were regularly discharged—124—were cured. Whether that inference be correct or not the reader can decide as well as we.

Of the 276 patients received in the course of the year, the relation to marriage of but 242 was ascertained. In these, it was:—

	Men.	Women.
Single	151	9
Married	50	32
Total	201	41

Thus, of the men, the number unmarried was threefold greater than that of the married; while of women the married were three and one-half times as numerous as the unmarried.

A supposed cause of the mental disorder was given in 142 cases. The most prominent of these were: masturbation, in 31; dissipation, 29; religion, 15; loss of property, 8; epilepsy, 8; love, 6; failure in business, 6; child-bearing, 5; family trouble, 4; disappointment, 5; hereditary, 4; infidelity of wife, 3; injury of the head, 3. These include all but fifteen of the cases mentioned; and these are attributed, one each, to fifteen different causes.

This table is eminently suggestive, but we must leave our readers to follow the suggestions at their own leisure and liking.

The nativity of 274 of the 276 patients is mentioned. Only one was born in California. Twenty-two of the other States gave birth to 105; the District of Columbia to 1; and "America"—State not learned—to 5. Of the foreigners, Ireland furnished 57; France, 25; Germany, 24; England, 11; China, 7; Mexico, 6; Canada, 4; Switzerland, Italy, Prussia, Scotland, and Chili, 3 each; Peru, 2; and eleven other countries, 1 each.

The text of Dr. Aylett's report is almost wholly devoted to the material condition and interests of the hospital; but he speaks of the utility of games, and the still greater benefit to be derived from labour, especially if it be performed in the open air.

P. E.

ART. XVII.—*The Gray Substance of the Medulla Oblongata and Trapezium.*
By JOHN DEAN, M. D. Published by the Smithsonian Institution, Washington City: February, 1864. 4to. pp. 75.

THIS valuable memoir is the result of over two years of constant study devoted solely to investigations into the topography of the medulla oblongata and trapezium. It is illustrated with five wood-engravings and sixteen beautiful

lithographs drawn from a series of admirably executed photographs, the negatives of which were taken by the author.

In the first two chapters a detailed account is given of the morphological changes which take place in the medulla oblongata both of man and the sheep. The position, structure, and development of the hypoglossal nucleus, and the origin, course, and decussation of the roots of the hypoglossal nerve are carefully described in Chapter 3d. The crossing of these roots having been a subject of dispute among several eminent histologists, Dr. Dean has made it a special study.

"The decussation of the hypoglossal roots," he writes, "first pointed out by Kölliker, has recently been denied by Schröder van der Kolk. Kölliker¹ states that there is a 'total decussation of the roots of both sides, on the floor of the fourth ventricle, so that those from one nucleus pass over into that of the opposite side.' Lenhossek² also makes a similar statement with regard to the inner nerve bundles. Clarke³ states that fibres from the hypoglossal 'bend inwards and decussate through the raphè with their opposite fellows.'

"On the other hand, Schröder van der Kolk,⁴ after many investigations on different animals, as well as on the human medulla, was able 'to completely satisfy himself that this nerve does not decussate, but is lost entirely in the hypoglossal nucleus, being connected with multipolar cells by numerous fibres.' He states, however, that the two nuclei are brought into connection by means of commissural fibres crossing the raphè and derived from the cells on each side.

"The question is by no means an easy one to decide; my first attempts at solving it led me to think that Schröder van der Kolk was right in his opinion, but in going over the whole ground again with very great care, and examining specimens from the medulla of man and various animals, prepared by different methods,⁵ I could have no doubt that some of the hypoglossal roots certainly decussate directly at the raphè, standing about in equal proportion to the main bundles as do those of the anterior spinal roots which can be traced into the anterior commissure of the spinal cord.

"Some of the fibres of the hypoglossal roots, especially those lying along the inner edge of the bundle nearest the raphè, turn off either just before or immediately after they enter the broad band of marginal fibres, and pursuing the same course, proceed towards the raphè, where they decussate with their fellows from the opposite side. Schröder van der Kolk is undoubtedly right in his assertion that the great loops of decussating fibres figured by Kölliker, and named by Lenhossek *ansa hypoglossi*, are formed not from the hypoglossal roots, but by the band of border fibres described above, which he has clearly shown to be derived from the vagus, and as he has also pointed out, this adds greatly to the difficulty of deciding the question. Most of the fibres forming the hypoglossal roots undoubtedly penetrate deeply into the nucleus, as maintained by Schröder van der Kolk, but a careful and repeated examination, especially with high powers, has convinced me that some of them turn aside, and that a direct decussation exists of *a few* at least of the root bundles. In the cat, especially in the lower part of the hypoglossal nucleus, the course pursued by the roots is very distinct, and quite numerous bundles may be traced, accompanying the marginal fibres derived from the spinal accessory to the raphè; higher up the course is somewhat more obscure, as the band proceeding from the vagus is so much broader and more prominent than that from the accessory."

The passage into the medulla of the posterior vesicular columns and tractus intermedio-lateralis constitutes the subject-matter of Chapter 4th. The observations of our author herein recorded, together with those of Clarke and Schröder van der Kolk, tend to establish completely the important fact "that

¹ Mikroskopische Anatomie, II. 459.

² Neue Untersuchungen, 32.

³ Philos. Transactions, 1858, 253.

⁴ Medulla Spinalis and Oblongata, 1859, 97.

⁵ Especially specimens hardened in chromic acid and made transparent by turpentine, this method seeming to me decidedly the best for tracing the course of fibres.

the respiratory centres are brought into connection with descending fibres from the trifacial, forming together a system of descending longitudinal fasciculi connected with columns of cells, continuous with those in the cervical and dorsal regions of the spinal cord, and thus connected with both anterior and posterior cornua, serving to bring into action a series of movements, both direct and reflex, the importance of which can hardly be over-estimated."

Chapter 5 is devoted to an account of the vagus nucleus and roots. Dr. Dean's examination of this portion of the nervous system has led him to the conclusion that three classes of nerve fibres are contained in the medulla oblongata. He says:—

"It is a question of great interest to ascertain, if possible, whether, as is the case with the spinal roots, any of the vagus fibres are directly continuous with those of the hypoglossal, but it is extremely difficult to decide this point with accuracy. I have repeatedly thought that I could make out a direct continuity between single fibres from the anterior bundles of the vagus and some of the hypoglossal roots, especially those which turn backwards. Clarke seems to have traced a similar continuity between some of the fibres of the hypoglossal and spinal accessory nerves, stating that some of the fibres of the latter nerve 'may be traced even to the cells of the hypoglossal nucleus, where apparently they form loops of continuation with the fibres of the hypoglossal nerve.'

"If such be the truth, we have in the medulla three classes of nerve fibres, analogous to those I pointed out formerly as existing in the spinal cord,² viz.:—

"(1) Vagus (spinal accessory) and hypoglossal roots which arise from or terminate in cells in their respective nuclei.

"(2) Vagus (spinal accessory) and hypoglossal roots meeting in cells.

"(3) Vagus (spinal accessory) and hypoglossal roots directly continuous."

In the remaining three chapters of the first part are described the glossopharyngeal nucleus and roots, the olivary bodies in man and the mammalia, and the antero-lateral nucleus.

Dr. Dean's observations upon the histology of the olivary bodies in man are, in every important particular, in complete accordance with those of Clarke. With regard to the function of these bodies our author observes that—

"Whether or not it is true, as Todd and Bowman have surmised, 'that the olivary bodies constitute the essential portion or *nucleus* of the medulla oblongata, that on which its power as an independent centre depends,'³ it is evident that they are very largely concerned in the *co-ordination* of action, bringing into harmony the most distant parts of the medulla, and appearing to stand, in connection with the system of arciform fibres, much in the same relation to the nuclei of the *medulla oblongata*, as the cerebellum and fibres of the pons Varolii do to the nuclei of that part of the central nervous system to which they belong."

According to Dr. Dean, the groups of very large cells from which the upper olivary bodies originate are developed from the remains of the antero-lateral nuclei. He thinks it extremely probable that the antero-lateral nucleus is, in the lower part of the medulla, accessory to the olivary column, and that it is continued upward into the trapezium, where it is developed into the upper olivary body.

The second part of the memoir under notice treats of the morphological change in the trapezium of the mammalia and of the histological composition of the auditory, facial, and abducens nuclei and roots, and the upper olivary bodies.

The care and accuracy with which his investigations have been conducted,

¹ Philos. Transactions, 1858, 252.

² Mem. American Academy, 1851, 349.

The three classes referred to are as follows: (1.) Anterior and posterior roots which arise from or terminate in anterior or posterior cells. (2.) Anterior and posterior roots which meet in cells near the central part of the gray substance. (3.) Anterior and posterior roots which are directly continuous.

³ Physiological Anatomy, I, 267.

and the minuteness of detail with which they are described, give to the labours of Dr. Dean a value of the first importance in the literature of histological research. We earnestly hope, therefore, that he will continue to cultivate the peculiar study for which he is evidently so well adapted by his powers of close and discriminating observation.

J. A. M.

ART. XVIII.—*A Treatise on Human Physiology; designed for the Use of Students and Practitioners of Medicine.* By JOHN C. DALTON, Jr., M. D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York; Member of the New York Academy of Medicine; of the New York Pathological Society; of the American Academy of Arts and Sciences, Boston, Mass.; and of the Biological Department of the Academy of Natural Sciences of Philadelphia. Third edition, revised and enlarged. With two hundred and seventy-three illustrations. Philadelphia: Blanchard & Lea. 1864. 8vo. pp. 706.

THAT a third edition of this excellent work should be called for in the short period of time which has elapsed since it was first issued, is the best proof of its intrinsic value, and of the high estimate placed upon it by the medical profession.

The treatise is now so well known, and has already been so fully analyzed in the pages of a former number of this Journal that it is unnecessary at this time to dwell upon it at any length.

In the present edition it is sufficient to say that the general plan and arrangement of the two former ones have been preserved. Some recent experiments of the author with regard to the secretion and properties of the human parotid saliva, the quantitative analysis of this fluid by Mr. Perkins, the valuable observations of Prof. Austin Flint, Jr., on Stercorine Cholesterin and the effects of permanent biliary fistula, and those of Prof. Jeffries Wyman, on Fissure of Hare-lip in the median line from arrest of development, constitute the principal additions which have been incorporated into the text. Three new illustrations have also been introduced.

J. A. M.

ART. XIX.—*The Pathology and Treatment of Venereal Diseases; including the Results of Recent Investigations on the Subject.* By FREEMAN J. BUMSTEAD, M. D., Lecturer on Venereal Diseases at the College of Physicians and Surgeons, New York; late Surgeon to St. Luke's Hospital; Surgeon to the New York Eye and Ear Infirmary. A new and revised edition. With illustrations. Philadelphia: Blanchard & Lea. 1864. 8vo. pp. 640.

IT is gratifying to see, from the early demand for a second edition, that the favourable opinion we expressed of Dr. Bumstead's work on *Venereal Diseases* when it first appeared, is confirmed by that of the profession generally. These diseases are very common, often mistaken, and quite generally badly treated, and we cannot designate another recent work so well calculated as this to aid the practitioner in acquiring a knowledge of the character and treatment of these loathsome and wide-spread affections.

The most noticeable change in the present edition of Dr. B.'s treatise is the dividing of the second part of the work into two, so that chancre or soft chancre, with its complications, is separated entirely from syphilis. We need hardly say that this change meets with our hearty approval, for, in reviewing the first edition, though we ventured to differ from Dr. Bumstead with great hesitation, we

stated that we should have preferred not to find them described together. Considered apart in a medical work, there is less danger of their being confounded in practice. The terms "soft," "hard," "simple," and "infecting chancre," are also abandoned; to the initial lesion of syphilis the term *chancre* is exclusively applied, while the contagious ulcer that never infects the whole system is called *chancroid*.

After pointing out these changes, Dr. Bumstead thus concludes his preface:—

"The practical portion of the work has also undergone important alterations on various topics, among which may be mentioned the treatment of stricture by the 'immediate plan' of Mr. Holt; the abandonment of specific remedies in most cases of the initial lesion of syphilis; the preference given to the external rather than the internal use of mercury in secondary and tertiary syphilis; and the necessity of trusting to nature, aided by hygienic influences, and not to treatment indefinitely prolonged after the disappearance of all syphilitic manifestations, to eliminate the virus from the system. Numerous emendations and additions of a minor character have been made; every portion of the work has been carefully revised; a number of chapters have been rewritten; several new illustrations have been added; and no effort has been spared to render the present edition a complete treatise upon the subject of venereal, thoroughly on a level with the most advanced state of our knowledge."

Since the publication of the first edition of this work a good deal has been written upon syphilitic affections of the internal organs, and we should have been pleased to see some mention made of disease of the liver besides as a symptom of congenital syphilis, and of the influence which syphilis exercises in the development of Bright's disease. Within the past two months a gentleman, twenty-eight years of age, who had had primary disease five years ago, and who had been under our care for nearly a year with ulcerations on the leg and head from suppurated gumy tumours, which were almost entirely healed, became affected with general dropsy; his urine was found to be very highly albuminous and he died before four weeks had elapsed, from the extent of the effusion in the abdomen. No *post-mortem* examination was made, but, as Thudichum says, "the presence of albumen in the urine indicates a pathological condition of the kidneys, of a temporary, chronic, or permanent character," and the pathological condition which must have here existed we are induced to attribute to syphilis.

The progress in our knowledge of syphilitic disease during recent years is so constant, that it is singularly difficult to write a work "thoroughly on a level with the most advanced state of our knowledge."

W. F. A.

ART. XX.—*A Treatise on the Chronic Inflammation and Displacements of the Unimpregnated Uterus.* By W. H. BYFORD, A. M., M. D., Professor of Obstetrics, etc., Chicago Medical College, Medical Department Lind University. 8vo. pp. 215. Philadelphia: Lindsay & Blakiston. 1864.

It is difficult to account for the difference of opinion which exists among medical men in regard to almost every point relating to the pathology of nearly all the morbid conditions of the uterus and its appendages, but especially as to their true relationship to the long catalogue of nervous phenomena so frequently met with in the female.

It would seem at first sight to be an easy task, if the disorders of the female sexual organs are of such frequent occurrence as they are supposed to be by many modern authorities, to settle definitively their character, and the sympathetic or reflex phenomena to which they give rise. But although treatise after treatise, written with the view of throwing light upon these subjects, has appeared within the last quarter of a century, physicians would appear to be as far as ever from accord in respect to them.

The difficulty in the way of arriving at the truth in this as in other fields of observation exists less in the intricacy of the question to be solved than in the too common error having been fallen into of assigning to single facts or to a limited series of facts too prominent and wide an agency in the explanation of phenomena commonly, but not invariably, associated with them than in men.

The leading purpose of the essay before us is to determine the relationship which exists between chronic inflammation and displacements of the unimpregnated uterus and the nervous symptoms general and local, which, although not exclusively confined to women, are more frequently observed in them.

It having been found that a great variety of nervous phenomena, varying in character and degree in different cases, and occasionally exhibiting the utmost severity, are in very many cases associated with some morbid condition of the uterus, the latter have been assumed by a large and highly respectable portion of the profession, as their most common, if not their only cause ; reviving thus the doctrine of hysteria as taught by the older physicians. It is maintained that the sexual system of the female, when in a diseased condition, exercises a morbid influence over nearly the whole organism, but more especially over the spinal and cerebral nervous systems, and that the only sure and permanent relief when such sympathetic morbid phenomena occur, is to be found in the removal of the disordered condition of the uterus.

By one class the morbid influence exerted by the uterus upon the cerebro-spinal nervous system is believed to be manifested only when the organ is in a state of inflammation or ulceration ; by another it is referred mainly, if not entirely, to some form or degree of displacement of the organ, independent of inflammation or ulceration—though both the latter may take place as a result of the displacement ; while, by a third class, it is maintained that the hypersthenia or other diseased condition of the uterus, so often found associated with certain general nervous phenomena, is not to be taken as the cause of the latter, but in common with these is to be referred, in the majority of cases, to a morbid condition of the cerebro-spinal system of nerves, induced most commonly by a course of life in direct violation of the recognized laws of hygiene ; though, occasionally, brought about by chronic disease of some important organ other than the uterus.

The views advocated by Dr. Byford in the work before us coincide with those of such as believe in the great sympathetic influence of the uterus, and that inflammation and its accompanying effects are the conditions upon which its sympathetic energies depend. If such be really the case, we see no difficulty in the way of its truth being established by a course of clinical observations, while we do not believe that it can be done satisfactorily by a series of analogical reasonings. Dr. Byford asserts, "after an observation of a large number of unmistakable cases, that the unimpregnated diseased uterus does produce grave and even fatal disorders in other parts of the organism by its reflex or sympathetic influence." Such is also the testimony given by others who have made these diseases their special study ; and we admit the testimony to be founded in truth. Others, however, founding their conclusions from the facts culled by them from out a wide field of observations, deny the frequency of uterine disease ; when it does occur they ignore its agency in the production of the general nervous symptoms with which it is found, in certain cases, to be associated. It is between these two extremes that the true conclusion we suspect will be found to lie. While, in very many instances, the hypersthenic, congested, and even subacutely inflamed state of the uterus, and the general morbid phenomena with which the uterine disease is associated are due to a common cause, it is very certain that in other, and by no means a limited number of, cases, the general symptoms are the direct result of the disease of the uterus. The strongest evidence in proof of the latter statement is the fact stated by Dr. Byfield, perhaps, in too absolute a manner, however, that the general symptoms will be found to subside after the local disease is cured.

"It is said," remarks Dr. Byford, "by those who deny the local origin of female nervous symptoms, that the general treatment is such as to insure a cure of the local disease in spite of local irritants. Dr. Bennett and all other judicious writers very properly direct the use of general treatment, yet they state,

that it is not in most cases essential to a cure; that it is merely palliative, or at most, auxiliary. This may be readily verified by anybody who will observe the effects of both treatments. I am prepared to say that I do not believe it best, in the majority of cases that come under the observation of general practitioners, to resort to any studied general treatment, and that I believe some of the general management resorted to is injurious instead of beneficial. One measure in particular, very generally recommended—confinement to the horizontal position—I consider as almost invariably fraught with mischief. Seventy-five per cent. of the cases I have treated have had no general treatment: the local being quite sufficient. It will not do, therefore, to say that my cases were cured by the general treatment advised. I think that general treatment is essential in a few instances only, in conjunction with the local. It is, at best, but auxiliary. That inflammation and its consequences are the cause of these multitudinous ailments is most satisfactorily proved, I repeat, by their entire removal by this local treatment. Experiment is the best means of convincing an impartial practitioner of the accuracy of the theory of the local origin of so many general symptoms.

"I have been often asked by medical men why it is that after a woman has improved to a certain point under the influence of local treatment, giving promise of a satisfactory cure, all progress ceases, and the cure remains imperfect. In a few instances I have had an opportunity of examining such cases, and have found that there was still sufficient inflammation to account for the state of the case, and further local treatment removed the impediment to a cure, and perfected it. It would be contrary to all other instances in which general or secondary affections arise from sympathetic influence, if some of the secondary affections did not outlast the primary disease. No proper objection can be urged against the theory in consequence of this fact, as it is only in accordance with other examples. The cases in which the general symptoms do not subside after the cure of the local (when the former are the consequence of the latter) are not very frequent exceptions to the general rule, that to remove the cause is to cure the disease. And when the general symptoms are not cured the condition of the patient is generally, if not invariably, improved by the removal of some and the amendment of other symptoms."

It will be impossible for us to follow the author in his analysis of the general and local symptoms to which disease of the uterus is liable to give rise, nor is it necessary, as these symptoms do not occur alike in every case; nor can any one, or even several of them combined, be considered as certainly pathognomonic of disease of the uterus, for in no case can the presence of the latter be safely affirmed unless it has been made manifest by the touch or sight.

The general symptoms to which disease of the uterus gives rise are of almost every character, and of varying grades of intenseness, from the most trifling to a degree that would appear to threaten with prompt extinction the life of the patient. They consist in disturbances of the stomach and bowels, and of the nervous system generally. There is scarcely a disagreeable or painful sensation that is not experienced, and which often gains for the patient but little commiseration, because her appearance does not correspond with the apparent severity of her symptoms, and from the fact that she will pass from a state of excruciating suffering and loud complaints, under a little excitement, to one of actual enjoyment and hilarity. The most common of the disagreeable sensations and pains referred to are cephalgia, partial or general; pain in the course of the spine; about the hypogastrium, groins, sacrum, and the region of the pelvis generally. There is an increased secretion of urine, usually limpid, odourless, and insipid, but sometimes it is highly charged with salts, giving rise to frequent painful micturition and other disagreeable sensations: occasionally there is a diminished secretion of urine. In some cases the mammae become congested, hot, and painful. There is, commonly, a sense of weight or bearing down; often leucorrhœa, painful menstruation, menorrhagia, and sometimes amenorrhœa. The mental and moral qualities of the patient are liable to the same strange, extravagant, and startling aberrations that mark the more severe attacks of hysteria. All or the greater number of these symptoms may be present in the same case; but more commonly, in different cases, certain of them, only, will be

prominent, while others of them are wanting; nor is the importance or the severity of the general symptoms always in proportion to the amount of local disease in the uterus.

The chapter on the complications of inflamed cervix is replete with interest. The complications referred to are vaginitis, urethritis, rectitis, cystitis, cellulitis, or ovaritis, and displacements of the uterus, each of which is cursorily described.

Displacements Dr. B. supposes to be an effect of the pre-existing inflammation, which, by increasing the size and weight of the uterus, causes it to settle down; the sufferings to which it gives rise being produced by the pressure of the displaced organ upon morbidly susceptible organs, made so, perhaps, by a long continuance of the pressure, and by the sense of soreness in the inflamed uterus itself, and also in part by traction upon the lateral and round ligaments.

"Still," Dr. B. remarks, "I have no question that in very rare instances the displacement results from other causes than inflammation, and then I can easily comprehend how it may produce inflammation in the uterus. The circulation must be embarrassed, congestions will readily occur on account of pressure and forcible flexion of the veins and arteries, and inflammation is very apt to follow long-continued congestion." &c.

After describing the position of the uterine inflammation under the heads of *sub-mucous* or *fibrous*—with its consequences, hypertrophy and induration, or atrophy with induration; *mucous inflammation*, of the cavity of the cervix, or the cavity of the uterus, Dr. B. describes its progress and termination in each of these cases. This and the ensuing chapter, on the diagnosis of inflammation of the womb, are very well drawn up, and will be found full of instruction by the young practitioner. They contain nothing, however, particularly novel.

In the chapter on the general treatment of chronic uterine inflammation will be found an excellent summary of the therapeutic measures which the author's experience has approved as those best adapted to conduct the disease, in the several conditions under which it presents itself, to a favourable termination. We entirely agree with him in believing that, in the great majority of instances, the patients labouring under chronic inflammation of the womb are injured, rather than benefited, by confinement in the recumbent position.

"More than ordinary acuteness of the symptoms," says Dr. B., "indicating a high degree of inflammation, occurring in the beginning and continuing throughout, or arising during the progress of a case as the effect of temporary causes, will make rest indispensable to the removal of them. Hemorrhage at the time of menstruation, or between the menstrual periods, is also a reason for strict quiet. Where neither of these conditions is presented I think the patient will, in most cases, be much benefited by judiciously directed exercise. I feel like insisting upon the enforcement of out-door exercise as the rule in these cases, for I have often had an opportunity of contrasting in the same cases the influence of quiet and exercise upon the recovery of patients of delicate nervous constitutions."

We call attention to the very judicious remarks of the author on the treatment of the general nervous prostration and nervous excitability so often observed in different cases in connection with chronic uterine affections. In fact, the entire series of therapeutical directions given by him to meet the several symptoms which are commonly attendant upon chronic inflammation of the uterine organs are well worth a careful study; they bear throughout the characteristics of careful observation and sound judgment.

By general treatment alone Dr. B. does not believe, however, that a cure was ever effected. In respect to the local treatment recommended by him we see little or no improvement over that laid down by almost every other writer on the disease under consideration. Baths, especially hip or sitz-baths, shower-baths, and sponge-baths; injections of simple water, or medicated by the addition of various astringent substances, are applicable alike to almost all cases, while in simple mucous inflammation, or ulceration, Dr. B. has been in the habit of using most frequently, and, in fact, almost exclusively, after the various depletory measures, nitrate of silver, tannin, acid nitrate of mercury, nitric acid, and caustic potassa, as local remedies. The nitrate of silver is the application

most frequently employed, and is considered by him the standard remedy in cases of inflammation and ulceration of the *muco-sous membrane* of the os and cervix uteri. For the mode of employing the nitrate of silver, the frequency with which its application should be repeated, the length of time its use should be continued, and the nature of the substitutes proposed for it when it fails to do good, we must refer our readers to the twelfth chapter of Dr. Byford's treatise, where he will find these subjects treated of at considerable length.

The treatment of sub-mucous inflammation complicated with ulceration is next considered, and the value of scarification, leeching, the seton and issue in its removal, and the circumstances and mode in which they are to be employed examined. The treatment of hardness and enlargement of the cervix uteri consists, so long as tenderness, heat, and other signs of an acute condition are present, in leeching or cupping, cathartics, alteratives, anodynes, until these symptoms are removed or very much relieved: then, if the increase in size continues, and is considerable, Dr. B. advocates the application of the caustic potash, so as to cause an absorption of the fibrinous deposition on which the enlargement depends.

In the author's account of displacements of the uterus, their philosophy and treatment, we find nothing particularly novel. As we have already seen, he classes these displacements, in the majority of cases, as one of the results of inflammation, and believes that they can only be remedied by removing the diseased condition of the uterus upon which they depend. His remarks on supporters and pessaries will be read with profit. Though not, evidently, a very strong advocate for the pessary in the usual run of cases of uterine displacements, Dr. B. still concedes to them, in our opinion, too much credit as remedial measures in such cases. The cases in which they are calculated to afford relief are, we believe, but few, while those in which they are liable to do much mischief are of constant occurrence.

D. F. C.

ART. XXI.—*Report of the Board of Health of the City and Port of Philadelphia to the Mayor, for the year 1863.* 8vo, pp. 56.

From the annual reports of the several Boards of Health, the sanitarian would naturally expect to derive important materials to assist him in his investigation into the state of health of our cities, and into the sources of whatever diseases may be found to prevail endemically in either of them. How far the reports of other boards may be found to realize this reasonable expectation we shall not stop to inquire. Our present business is with the report before us. This, we are sorry to say, presents but few facts bearing directly upon the sanitary condition of Philadelphia, and these few are given in so general and vague a form as to deprive them of nearly all value as a basis for any safe conclusions.

The style of the report, too, is in the highest degree slovenly and incorrect. Upon almost every page violations of the simplest rules of grammar are to be met with; while many of its sentences are so awkwardly framed as to require for the elucidation of their true meaning some degree of guess-work.

As an example of the clumsy, almost unmeaning sentences with which the report, short as it is, abounds, take the following:—

“With the exception of a very limited number of cases of an unusual form of fever, commonly called ‘spotted fever,’ and a general prevalence of ‘influenza,’ there has been no evidence of any epidemic influence whereby the figures of an unusual percentage of deaths for the year should be increased.”

“In the absence of any provision by the proper authorities to accommodate such cases” (those of smallpox), “the Board, in view of the emergency, directed an unoccupied building at the Lazaretto to be prepared for their reception. From that time to the present every applicant effected with this disease has been conveyed to said building.”

"The City of Philadelphia has for many years enjoyed an enviable reputation both at home and abroad. The regularity of her right-angled, well-swept streets, and thoroughly washed gutters, have been a source of pride to her citizens, and a subject of special commendation by strangers. Within the past two or three years, however, almost an entire change has been experienced in that respect."

"We still incline to the opinion that the time has fully arrived when all burial-grounds and vaults attached thereto, in the thickly built districts of the city, should by legislative enactment be forever closed. We believe that danger may attend this practice, and hope an effort will be made by the public authorities to abolish all intermural interments."

The report of the registration of births, marriages, and deaths, for 1863, is a much better drawn up report—more valuable in all its statistical relations, and more reliable in its general deductions. It will not be necessary for us, however, to enter here into any examination or analysis of it, inasmuch as the entire ground it goes over in respect to the movement of the population of Philadelphia will be found occupied by the report to the Board of Health, on Meteorology and Epidemics for 1863, published entire in another department of this Journal.

One portion, however, of the registration report may demand a passing remark; it is that which has reference to the nomenclature employed by physicians in making their returns of deaths to the Board of Health. We are as deeply impressed as any one with the importance of the adoption in our bills of mortality of a simple, intelligible, and uniform nomenclature of diseases, and, as far as possible, in the English tongue. We regret that there should be so much obscurity in the mortuary tables of our own city as there certainly is, resulting from the looseness, inaccuracy, and vagueness—often, indeed, the perfect absurdity of the names given to the diseases reported as the causes of death.

This defect in our bills of mortality is to be ascribed almost exclusively to the provisions of the registration law: by which the certificate of anybody and everybody assuming the name of physician has to be received—of the uneducated pretender, of the unscrupulous charlatan, and, in certain contingencies, of an illiterate nurse, undertaker, or neighbour. It may, perchance, happen that the very young practitioner will be found indulging, occasionally, in a stilted nomenclature unfamiliar to all beyond the profession, and by them scarcely tolerated; but to intimate that it is a common practice of well-educated physicians to employ, more especially in their certificates to the Board of Health in cases of death, high-sounding names for diseases which can be equally as well identified by more familiar terms, and this simply for the purpose of astonishing, by a show of their learning, those who may have occasion to consult the registry of deaths—and such a charge is at least insinuated in the report before us—is, we assert, a libel upon the profession, and appears with a very ill grace in a document drawn up professedly by an unprofessional, though, we believe, a very effective officer of the Board.

D. F. C.

ART. XXII.—*On Rheumatism, Rheumatic Gout, and Sciatica, their Pathology, Symptoms, and Treatment.* By HENRY WILLIAM FULLER, M. D. *Cantab.*, etc. etc. From the last London edition. 8vo. pp. 424. Philadelphia: Lindsay & Blakiston. 1864.

IT is not necessary that we should enter, on the present occasion, into an analysis of the work of Dr. Fuller. In our notice of the former editions we presented a full exposition of the views advocated by the author in regard to the pathology and treatment of the several forms of rheumatism indicated in its title, together with the further elucidations of those views presented by him in his second edition.

In the third edition now before us, the work throughout has undergone a

very full and careful revision, while many practical suggestions have been added, and a record given of Dr. Fuller's experience as to the action of remedies which have been recently introduced. He reiterates, after further trial of the method of treatment proposed by him, the confidence he had before expressed as to its efficacy. He has verified by enlarged experience its power to subdue the pain and inflammation of rheumatism within a few days, and if vigorously carried out, to protect completely the heart from mischief.

In respect to the nature of rheumatic gout and its entire independence of both gout and rheumatism, the views advanced originally by our author have received confirmation from the published researches of Adams, Garrod, and others. Dr. Fuller assures us that extended observation has led him to believe that when properly managed this disease is one far less obstinate and intractable than it has seemed to be under the ordinary plans of treatment.

As to the nature of chronic rheumatism, Dr. Fuller believes that much still remains to be ascertained. He is convinced that many maladies are included under that comprehensive term "which have nothing in common more than have smallpox and chickenpox." He has endeavoured as much as possible to separate the different varieties of disease included under the name of chronic rheumatism, and to indicate the treatment best adapted to the removal of each.

Dr. Fuller gives the result of his experience of the very favourable effects derived from injections of morphia into the cellular tissue at the vicinity of the local suffering. He also specifies the conditions under which galvanism, electricity, and other remedies prove useful. The histories of a few cases are appended illustrative of the treatment recommended.

The entire volume is deserving of a careful study; every page of it is replete with instructive matter.

D. F. C.

ART. XXIII.—*Handbook of Uterine Therapeutics.* By EDWARD JOHN TILT, M. D., etc. etc. 8vo. pp. 280. WILLIAM WOOD & CO. New York, 1854.

THE present work is, properly speaking, a sequel to the author's treatise on "uterine and ovarian inflammation, and diseases of menstruation," which has already passed through several editions. It is not to be viewed simply as a reproduction of what had been already said on uterine therapeutics, but as embodying the results of twenty-five years of the author's practice. Its main object is "to determine the real value of those various modes of treating inflammatory affections of the womb that have been more or less exclusively advocated by eminent practitioners during the last fifty years."

Although we do not much admire the arrangement of the present handbook, we admit, nevertheless, that it furnishes an admirable guide to uterine therapeutics. The practical comment it presents on the leading plans that have been proposed for the removal of the several womb complaints cannot fail to lead, whoever will give it an attentive study, to a correct judgment as to their relative value under specific circumstances. The very repetition to which the plan adopted by Dr. Tilt gives rise, is adapted to impress upon the student a knowledge of the morbid conditions of the uterine organs under the different aspects they present in practice.

It would be scarcely possible to furnish an analysis of the several chapters of the work. Even a notice of the author's solution of the more important questions embraced in it would swell our notice far beyond the limits to which we are necessarily limited.

Dr. Tilt resolves all the diseases of the uterus into the inflammatory and the nervous. The correct diagnosis of these two morbid conditions of the organ and its appendages is of no little importance, not only in reference to treatment, but also to prognosis. When found to be simply nervous, we feel, for the most part, reassured as to their result, whereas we know, as the author remarks, "that although uterine inflammation rarely leads to a fatal termination, chronic ute-

rine inflammation is often an ever lapsing morbid condition, out of which arise diseases of menstruation, diseased and ulcerated mucous membranes, hypertrophy, sterility, and displacement of the womb."

The chapter on uterine regimen and dietetics is particularly interesting and instructive; especially the portions which treat of rest and exercise, and of external and local applications, as poultices, liniments, vaginal injections and irrigations, enemata, suppositories, baths, etc. Upon all these particulars there is much neglect and no little misunderstanding, if not actual ignorance, in the profession, which needs correction.

There is much good sense in the author's remarks on caustics as a remedy in uterine diseases. His comments on the employment and range of utility of nitrate of silver, of caustic potash, and of the actual cautery, with the dangers attendant upon their employment respectively, will be read with interest and profit.

The chapter on the direct antiphlogistic treatment of uterine inflammations, especially so far as it relates to local depletion, by means of leeches, scarification, etc., contains a series of well-timed practical teachings, which neither inculcate the use of blood-letting, as equally proper and necessary, in every case of inflammation, as taught by former therapeutists, nor prohibits its use under all circumstances, whether inflammation be present or not, as is too much the case at the present day.

In the chapter on "Uterine Orthopaedics," Dr. Tilt presents his views in respect to uterine displacements, their diagnosis and treatment.

"The displacement theory," he remarks, "is founded on a most fallacious assumption, for, I maintain with Lisfranc, P. Dubois, Depaul, Gosselin, Bennet, Bernutz, and Goupil, that with the exception of prolapsus uteri, uterine displacements have no proper symptoms, and that the pain and other symptoms which accompany them are to be explained by congestion or inflammation of the womb, of its mucous lining, or of its serous envelope. It is by neglecting antecedents so important as cellulitis and peritonitis, or by undervaluing their agency, that the importance of flexions and versions of the womb has been exaggerated, whereas the womb has been disposed so as to admit of being twisted and turned with perfect impunity so long as it is not diseased, and flooding is often the first indication that the womb has been long subjected to extensive displacement by fibrous or ovarian tumours."

We call particular attention to the author's explanation of the causes of uterine displacements, especially of prolapsus and procidentia. The whole subject is very ably treated, and we feel convinced that the views advanced by him in respect to their importance, the phenomena to which they give rise, and the treatment, will be confirmed by cautious clinical observations.

His remarks on the value and mode of action of bandages and pessaries in cases of uterine displacement are ingenious, and, we believe, to a great extent, if not entirely, correct.

In respect to uterine flexions, to which has recently been by many assigned a most important position in the etiology of a long list of female sufferings, the opinion of Dr. Tilt is, that they rarely require any treatment, for, although they diminish the chances of conception, they seldom interfere with menstruation, particularly in cases of retroflexion. Anteflexion may, he admits, be so complete as to prevent the escape from the cavity of the womb of the menstrual blood; in such cases it will be justifiable to seek to rectify the bend in the womb, so as to allow it to empty itself of its contents. This should be done by means of an elastic catheter, used with very great care, and after sedulous preparation of the case by antiphlogistic measures—for uterine flexion is generally complicated by chronic uterine inflammation.

There is scarcely a page of the handbook that does not present food for remark, in the vast majority of cases of a commendatory character. We hail it as a most valuable addition to the literature of a class of diseases, the pathology and the therapeutics of which are still subjects of controversy.

D. F. C.

Q U A R T E R L Y S U M M A R Y
OF THE
I M P R O V E M E N T S A N D D I S C O V E R I E S
IN THE
M E D I C A L S C I E N C E S.

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A N A T O M Y A N D P H Y S I O L O G Y .

1. *Assimilation of Isomorphous Substances.*—M. ROUSSIN has performed a series of experiments on hens and rabbits, in order to ascertain whether similarity in form and composition is accompanied by any peculiar physiological properties. In one series of experiments, he investigated this question with regard to the shell of the hen's egg. This contains 90 per cent. of carbonate of lime; and he endeavoured to ascertain whether other isomorphous carbonates could be made to replace the lime-salt in the shell. Accordingly, some hens, some time before laying, were shut up in wooden cages, at a distance from the ground and from walls, and were fed with potatoes and oatmeal, or with oatmeal moistened with water. With their food, the substances with which the experiments were made, were mingled. The result of these experiments was, that carbonates of baryta, strontian, magnesia, peroxide of manganese, protoxide of iron, zinc, copper, lead, cobalt, or the oxides of these metals, were readily assimilated by the hens and eliminated in the coverings of their eggs. Alumina, sesquioxide of iron, manganese, and the oxides of antimony, were never found in the egg-shell.

Another series of experiments had relation to the soft parts of the egg. The albumen and yolk yield, on calcination, a notable proportion of chloride of sodium. As the alkaline iodides, bromides, and fluoxides, are isomorphous with this salt, it was endeavoured to ascertain whether, after their administration, iodine, bromine, or fluorine, would be found in the egg. Not only was this the case, but the quantity of these elements present in the egg was remarkably large. They were apparently distributed in equal proportions between the albumen and the yolk. Eggs containing bromine, iodine, or fluorine, have no peculiarity of taste; and it is suggested that this observation may be made useful for therapeutic purposes.

The administration of the alkaline iodides, and especially of the bromides, was accompanied by a singular phenomenon; viz., the gradual disappearance, in some instances, of the calcareous covering, in proportion to the increase of the above named substances in the interior of the egg. This occurred in hens left at liberty, and having free access to carbonate of lime; and was not generally observed in strong birds with good appetite.

In a third series of experiments, it was endeavoured to ascertain whether arseniate of lime could be assimilated and substituted for phosphate of lime in the bones—the arseniates being isomorphous with the phosphates. The result was found to be that, when small quantities of arseniate of lime are introduced into the food of a female rabbit, the animal gives birth to young whose bony skeleton contains a notable proportion of arsenic, while their muscular tissue

contains scarcely any traces. The arsenical compound is also eliminated by the urine in the form of arseniate of ammonia and magnesia.

M. Roussin concludes from his experiments, that substances isomorphous chemically are assimilated and eliminated in a like manner from the animal economy, and may be regarded as isomorphous in a physiological point of view.—*British Med. Journ.*, March 12, from *Journ. de Pharm. et de Chem.*, and *Gaz. Méd. de Paris*, Jan. 16, 1864.

2. Physiological Researches on the Motor Nerves of the Bladder.—M. JOSEPH GIANNUZZI draws the following conclusions from his researches:—

1st. That there are two different nerves to the bladder; the one set coming from the spinal cord go directly to constitute the hypogastric plexus, in order to distribute themselves to the bladder; the other set, which originates likewise in the spinal cord, traverse the great sympathetic and mesenteric ganglia before going to the hypogastric plexus.

2d. That the difference which is observed between the excitation of these two sets of nerves does not consist in the form or the place of contraction, but rather in its intensity and rapidity: for, whilst the nerves which go direct to the bladder produce a rapid and energetic contraction, those which pass through the sympathetic ganglia produce a slow and feeble action, and require to be strongly excited.

3d. That, in irritating any part of the lumbar region, we produce in some animals contraction of the bladder.

4th. That in all cases there are in this region two principal centres, which preside over the contractions of the bladder; one of these corresponds to the third, the other to the fifth lumbar vertebra.

5th. That the point corresponding to the third vertebra transmits its influence by the fibres which traverse the mesenteric ganglia, so that, after division of these fibres, irritations at this point do not give rise to contractions of the bladder.

6th. That the point of the spinal cord corresponding to the fifth vertebra transmits its action through the fibres which go directly to form the hypogastric plexus.

These researches were made in Bernard's laboratory.—*Journal de Physiol.*, Jan. 1863.

3. New Researches on the Functional Nature of the Roots of the Pneumogastric Nerve and of the Spinal Nerve.—M. E. VAN KEMPEN's experiments prove:—

1st. That the roots of the pneumogastric nerve contain the motory fibres which preside over the movements of the constrictor muscles of the pharynx, muscles of the larynx, and the muscular coat of the oesophagus.

2d. That the roots of the spinal nerve, on the contrary, contain sensitive and motory fibres which preside over the movements of the muscles of the shoulder, to which the external branch of this nerve is distributed.

3d. That these results are the same as those which Van Kempen obtained in 1842 by the application of electricity to the roots of these nerves; that, consequently, these effects are not attributable to derivation of the electric current, as they may be produced by other irritants, such as pinching, cutting, etc.

These conclusions are at variance with those of Longet, but seem to be based on rigorous observation.—*Journ. de Physiol.*, April, 1863.

4. Physiology of the Cerebellum.—Dr. P. LUSANNA, directing attention to two experiments on birds, in which the usual appearances of irregular and disordered motions were manifested on injuring their cerebella, the author commences his lecture by citing the opinion of Flourens, that co-ordination of the voluntary movements is the function of this organ. Clinical observation on man has not favoured this view; paralysis or powerlessness of voluntary movement, rather than disorder, characterizes lesions of the cerebellum. In a turkey, which Lusanna had succeeded in preserving some months after removal of the cerebellum, this powerless condition of the motor faculties was very manifest. At

first, in this turkey, for several days disordered and irregular movements were present, but these gradually gave place to paralysis. Patients complain of being unable to feel the ground below their feet, but their movements are not really paralyzed. Lusanna believes that the cause of these symptoms is *the loss of the muscular sense*, which co-ordinates voluntary movements. This sense differs from cutaneous sensibility in its anatomy, by its central organs, by its peripheral apparatus, and by its nerves. In its absence, an animal no longer feels the solidity of the earth on which it stands; it does not feel the resistance of the medium in which it flies or swims; it no longer feels the impenetrability of objects which oppose its progress, nor the weight of any body it attempts to seize or carry.

In man, diseases of the cerebellum usually give rise to hemiplegia of the opposite side of the body, most marked in the inferior extremity. In animals, the peculiar rotatory movements are disordered efforts at movement, but are nevertheless always voluntarily executed.(!) In birds, the disordered movements are bilateral or general; in mammals, they are unilateral. In the former, the cerebellum is one single mass superimposed on the medulla oblongata, and there is in it no decussation of its crura; in the latter, there are two lateral and a central lobe, and the posterior crura decussate. There is a correspondence in all classes of animals between the perfection of muscular sense and the development of the cerebellum. Lusanna is further of opinion that the cerebellum is the organ of the erotic sense, and that the middle lobe is the special seat of this function.

In reply to some critical remarks of Dr. Brown-Séquard on the above paper, Dr. Lusanna, in a subsequent article, adduces further proof of the correctness of his theory that the cerebellum is the organ of the muscular sense. He affirms that in 128 recorded cases of affection of the cerebellum, there is not one in which the symptoms were not those which characterize a lesion of the muscular sense, expressed, not by a state of irritation, but by want of action. If one such case, well observed, in which a *considerable* lesion of the cerebellum is not accompanied by lesion of the voluntary movements in some part of the body, can be adduced, Lusanna is willing to give up his theory. In the case of Schroeder van der Kolk, cited by Brown-Séquard, in which, after a wound of the cerebellum, the patient could walk or mount a ladder, there is no proof of any considerable destruction of the organ, and the symptoms would rather be those of irritation than of absence. A wound of the brain does not annihilate intelligence, yet no one asserts that the brain is not the organ of the intellect. If an animal, which has survived the removal of the cerebellum, does not exhibit signs of the loss of the muscular sense, the author is willing to abandon his theory. Experiments on fishes confirm what the author has observed in warm-blooded vertebrata. When vomiting, irregularity of the circulation, syncope, and convulsions occur, they indicate injury of the medulla oblongata, and are usually of fatal import. On the other hand, lesions of motility are by all experimenters regarded as characteristic of injury of the cerebellum.—*Ed. Med. Journ.*, May, 1864, from *Journ. Physiol.*, 1862, and April, 1863.

MATERIA MEDICA AND PHARMACY.

5. *Action of Bromide of Potassium in inducing Sleep.*—Mr. H. BEHREND extols (*Lancet*, May 28, 1864) this remedy in the treatment of insomnia and restlessness, accompanied by and dependent upon nervous excitement and irritability. Dr. Brown-Séquard first drew Mr. B.'s attention to this action of the article in question. Dr. Garrod also in his recent lectures on the British Pharmacopeia states that the bromide of potassium in large doses produces drowsiness.

The cases in which this remedy appears likely to be most useful, Dr. B. says, are those in which the nervous element preponderates, and it is in these that, for the most part, opium and its preparations fail to produce any good result, and are not well borne by the system, frequently even adding to the excitement

and irritability under which the patient labours. There can be no doubt, moreover, that cases of this type are unfortunately on the increase, since the highly artificial mode of life of the present day, especially in large cities, perpetually stimulates the nervous energy to the highest possible degree; so that even in the strongest constitutions the mental equilibrium is but too often shaken, and the weaker ones yield speedily to the excessive demands made upon them. The dose of the bromide recommended [25 grains three times a day] may appear large, but it is in all cases easily tolerated, and produces neither disagreeable nor toxic effects; the appetite is not interfered with, the alvine evacuations are regular and copious, and irritability of the bladder—a frequent accompaniment of restless nights—is greatly relieved. The only unpleasant result Mr. B. has witnessed has been slight and temporary headache; and Dr. Brown-Séquard, Mr. B. states, has given it with perfect safety for several successive weeks in drachm doses. Of the temporary paralysis, and weakening of sexual desire and power, which are said to follow upon the administration of large doses of the bromide of potassium, Mr. B. has seen nothing. Mr. B. wishes to try this remedy in the treatment of the restlessness of delirium tremens, but has not had the opportunity since he has become acquainted with its action upon the nervous system.

6. *Action of Digitaline on the Urine.*—According to Dr. B. H. STADION, of Kiew, the following are the results derived from a series of experiments. 1. Digitaline produces in health a diminution in the quantity of liquid secreted by the kidneys. 2. It diminishes the amount of the principal constituents of the urine, such as urea, chloride of sodium, the phosphates and sulphates. 3. The uric acid alone is increased; but the degree of acidity of the urine remains the same. 4. The specific gravity of the urine is diminished. 5. Digitaline at first increases the frequency of the pulse; it then produces a diminution in the number of contractions of the heart. 6. The rapid emaciation and the retardation of nutrition which follow the employment of digitaline are two important facts which aid us in understanding its action and proper mode of administration. 7. Digitaline acts like digitalis on the circulatory, nervous, muscular, and generative systems. 8. It is an energetic depressant of the generative system, and may for the time abolish all sexual desire. 9. Its action on the intestinal canal and digestive organs is less than that of digitalis. 10. A peculiar affection of the nasal mucous membrane, under the form of coryza, appears to constitute a characteristic symptom during the use of digitaline. 11. The power of digitaline appears to be thirty times as great as that of digitalis. 12. The ordinary dose of digitaline should not exceed one-fifth of a grain daily; in most cases, from one-twentieth to one-sixth of a grain is sufficient.—*Gaz. Méd. de Paris*, 28 Nov., 1863, from *Vierteljahrsschr. für die prakt. Heilk.*

7. *An Ounce of Quinine Administered by Mistake.*—Dr. TAUSSIG, of Rome, relates (*Med. Times and Gaz.*, April 23, 1864) the following case of this:—

“Dr. Hayler, a military surgeon, visited in barracks a soldier, suffering from a relapse of ague, and administered to him a small dose of sulphate of quinine. At the same time, he directed a man to fetch one ounce of the same remedy from the hospital, in order that he might have it in readiness for any emergency. The man received the bottle; but, supposing that it was ordered for the patient just mentioned, he took it to him. In the presence of their comrades, they put the whole into a cup, adding sufficient water to make a paste of it; and the patient, although he found the medicine uncommonly bitter, did not leave off until he had taken it all.

“Dr. Hayler, on learning that this enormous dose had been taken, at once visited the patient. The most careful investigation left no doubt of the fact; but, with all that, *incredibile dictu*, except a complete deafness and a kind of stupor, no other bad effect ensued, and no antidote was administered. He was directed to the hospital, where he remained a week under observation, and left the establishment in the best state of health. The ague disappeared, probably never to return. I saw the man myself; he is a Swiss, named Albitz, aged 30, of small stature, and of a strong constitution.”

8. *Means of Prolonging Anesthesia.*—Prof. NUSSBAUM has succeeded in prolonging the anaesthesia induced by chloroform by the subcutaneous injection of a solution of one grain of acetate of morphia. In one case the patient slept twelve hours, and underwent a painful operation without being sensible of any pain. The injection performed without the previous inhalation of chloroform produced no such effect.

9. *Citrate of Magnesia.*—M. PARISEL recommends the following method of preparing this article, which he has followed during two years, as being both simple and effectual:—

Take of powdered and well dried citric acid, 200 *grammes*; carbonate of magnesia, 120 *grammes*; mix accurately, and inclose the powder in a slightly warmed and well dried bottle, which must be kept well stopped. The mixture thus made is rapidly dissolved in three times its weight of water at the ordinary temperature; and, if the water be pure, the solution in a few minutes becomes perfectly transparent, without any precipitate. The salt preserves its solubility for a long time.—*Bull. Gén. de Théráp.*, 30 Dec., 1863.

10. *Syrup of Iron and Cinchona.*—M. GRIMAUT describes the following process for making a perfectly limpid syrup of iron and cinchona, having an agreeable taste:—

Take of pyrophosphate of iron and soda, 10 *grammes*; distilled water, 300 *grammes*; sugar, 700 *grammes*. The iron salt is dissolved in the water, and the sugar is added to it in a water bath. The liquid is then filtered, and ought to be perfectly transparent. This is important, as the pyrophosphate of iron and soda met with in commerce, when made into syrup, often give a black colour and an inky taste. The next step is to dissolve 5 *grammes* of hydro-alcoholic extract of red cinchona bark in 100 *grammes* of alcohol, to filter, and to add the solution cold to the syrup of pyrophosphate of iron and soda above described. The syrup contains in each teaspoonful 10 *centigrammes* (about one grain and a half) of extract of cinchona, and double that quantity of pyrophosphate of iron and soda.—*Ibid.*, 30 Nov., 1863.

11. *New Alkaloid from the Calabar Bean.*—Messrs. JOBST and HESSE, of Stuttgart, have instituted a chemical examination of the Calabar bean. They found the active principle to be contained in the cotyledons only. It was obtained by treating the beans with alcohol, and then acting by means of ether on the residue left after evaporation of the alcoholic solution. The ethereal solution after evaporation left pure *physostigmine*. Physostigmine is a brownish-yellow mass, amorphous, and in the first instance separated in the form of oily drops. It is easily soluble in ammonia, caustic, and carbonated soda, ether, benzole, and alcohol, less soluble in cold water. From the ethereal solution it is entirely precipitated by animal charcoal. The watery solution has a faintly burning taste, a clearly alkaline reaction; it gives a copious kermes-coloured precipitate with biniodide of potassium, and a precipitate of hydrated oxide in solution of chloride of iron; fused with hydrate of potash, it evolves fumes which have a strongly alkaline reaction. Acids dissolve it easily, and yield solutions of salts, which have mostly a dark red, more rarely a dark blue, colour. The hydrochlorate of physostigmine yields precipitates, with tannic acid, reddish-white; chloride of platinum, pale yellow; chloride of gold, bluish—a reduction taking place; bichloride of mercury, reddish-white. Twenty-one beans yielded only a little alkaloid. Two drops of a watery solution of the alkaloid placed on the eye caused the pupil to contract after ten minutes to about one-twentieth of its original diameter. In this condition it remained for an hour; after from four to six hours it had again assumed its former size. Taken internally, physostigmine is as poisonous as the most dangerous cyanides. The alkaloid from one bean was given to a rabbit. Five minutes afterwards it fell, remained motionless, and died twenty-five minutes later, or half an hour after taking the poison. Physostigmine causes contraction of the iris, even in the eye of an animal which has been dead for some time. A rabbit's eye treated with two drops of watery solution an hour after the animal had been killed me-

chanically, showed a contraction of the pupil to one-fourth of the other eye. A rabbit killed with physostigmine did not show this feature; but it was exhibited to a small degree by one which had been killed by cyanide of potassium. This shows that muscles, though dead, are yet liable to be influenced specifically, and not only by the galvanic current, but also by physostigmine.—*British Med. Journ.*, Feb. 6, 1864, from *Ann. Chem. und Pharm.*, Jan. 1864.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Treatment of Asthma by the Iodide of Potassium.*—Dr. HYDE SALTER states (*Lancet*, Jan. 23, 1864) that the iodide of potassium does not, according to his experience, deserve so high a place in the treatment of asthma as has been given to it. He finds it entirely fail in a great many cases. Sometimes, however, he has seen most striking results attend its use, and he quotes two cases which were greatly benefited by its use.

The first of these is the following:—

"E. H.—, a lady aged thirty, who had suffered from asthma for seven years past, came under my care in September, 1863. Her paroxysms were of two kinds—very severe ones, lasting several days, at long intervals; and slight ones, occurring every night, and disturbing her sleep for an hour or two. From these last she had been suffering every night for some weeks when I saw her. Omitting many of the details of her case, I may mention the following as the most relevant: Diet appears to exercise no influence on her attacks. Damp places agree with her the worst, and she is never well for the first day or two on going to a new place. She is liable to what she calls attacks of renal congestion, in which the urine is very thick and high-coloured, and she thinks that this state of the urine is associated with and produces the asthma. Her father is a martyr to rheumatic gout, quite crippled by it, and has been for years; an uncle died of gout quite young. She has tried an infinity of medicines, and as far as their effects go, they may be divided into two classes: those which give her slight relief, and those which give her no relief at all. Among the former are—inhaling chloroform, smoking stramonium, smoking various forms of cigarettes, burning nitre paper and inhaling the fumes, ipecacuanha as an emetic, mustard plasters, blisters, chloric ether in thirty-minim doses. Among the latter are—strychnine and nux vomica, valerian, lobelia, hot, strong coffee, sulphuric ether, Indian hemp. The benefit derived from inhaling chloroform, fumes of nitre paper, from ipecacuanha as an emetic, and from chloric ether, is great at the time, for the smaller attacks, but in each case evanescent.

"When I first saw this lady, she was staying at Chertsey, and having the minor attacks every night. I prescribed for her extract of stramonium, and one or two remedies which she had not tried. She called on me again about the 5th of October, and informed me that what I had prescribed for her did not seem to have affected her in any way: she still had the slight attacks every night. She was going away in three days to a place in Surrey, where she had always been bad and had had some of her most violent attacks; indeed, she had never been there without being violently asthmatic the whole time, and she looked forward to her visit with great apprehension. The house to which she was going was built, as she described it, almost in a well—in a place surrounded with water on all sides, and which was rather wet than damp. I ordered her five grains of iodide of potassium and twenty minimis of aromatic spirit of ammonia, in a wine-glass of water, three times a day. I saw her husband on the 22d of October, seventeen days afterwards, and his report was as follows: She had begun the iodide of potassium a day or two after I had ordered it, and had not had an attack of any kind, severe or light, since. The minor attacks had entirely ceased, and she slept uninterruptedly through the night, a thing she had not done for two or three months: she had gone to the dreaded place, and no attack

had occurred—the first time in her life that that had ever happened. Her husband did not know when he had seen her so well. She was daily gaining flesh and strength. The lady herself, with great simplicity, gave the strongest possible testimony to the effect of the remedy by saying, in her written account of herself, that ‘she had been so well since she had been taking it that she had had no opportunity of trying what its effects would be upon her asthma.’ To which of course I replied, that I did not care how long the same result should keep her ignorant of the virtues of the remedy.

“ It is now nearly a month since she has been taking the iodide, and she still remains perfectly free from her former symptoms. Occurring, as the change did, suddenly, and coincidently with the taking of the medicine, and under the most unfavourable circumstances—that is, when she was going to a place where she had never before escaped severe asthma as long as she was in it, I cannot but attribute the result to the remedy. What will be the effect of leaving it off, and whether on future occasions its results will be equally striking, the future only will show.”¹

In another case which he relates the iodide was equally beneficial, he says:—

“ It should always be borne in mind, in giving iodide of potassium for asthma, that it is often some time before it begins to take effect. I have a patient at the present time under my care who has been taking it for three weeks past in eight grain doses three times a day, but it is only during the last week that any decided improvement has taken place in him. He has lost his spasms; the expectoration has very much decreased; and he has ceased to experience an abiding ‘thickness’ and tightness of breathing that he had in the intervals of the attacks, and which never left him. His nurse tells me that whereas before, for months past, whenever he was asleep his breathing was audible and laboured, and accompanied with a slight wheezing, it is now inaudible and tranquil. Yet for the first fortnight this patient derived no apparent benefit whatever from the drug, and was anxious to give it up; now, however, he is convinced of the good it is doing him, and is anxious to continue it. It may be asked, Why do I think that the improvement is really to be assigned to a remedy that seems to remain so long inoperative? Why may not the apparent benefit be a coincidence, and the drug be really doing him no good whatever? I think the improvement is the work of the iodide for two reasons. In the first place, from the fixedness of the patient’s previous condition for a great length of time, no medicines or any other agencies that were brought to bear upon him making any difference in him. In the second place, from this tardiness of the action of the iodide of potassium corresponding with its action in other affections. How long is it, for instance, before it makes any appreciable impression upon a goitre, however complete and satisfactory its results may ultimately be!

“ I used to think that the benefit derived from iodide of potassium in asthma was entirely due to its beneficial influence in chronic bronchitis, and therefore that the only cases of asthma in which it did any good were cases in which chronic bronchitis and asthma coexisted, and the one was the exciting cause of the other. I am compelled, however, now to abandon that view; for in some of the cases in which its efficacy has been the most striking there has not been a trace of bronchitis.

“ Another theory that I once held I am also obliged to abandon—namely, that it was of advantage only in those cases in which the asthma was due to a gouty or rheumatic-gouty condition; and that it was by relieving this condition that it relieved the consequent asthma. In two of the cases that I have related this view would be borne out, for there was evidence of gout in both of them; but

¹ About a month after writing the above, I heard that this lady had had a severe attack of acute bronchitis from exposure to cold. She was taking the iodide of potassium at the time. The bronchitis was very severe, so that for a day or two her life was in danger; but she had *no asthma*, although on all former occasions on which she had had bronchitis it had induced asthma. On the abatement of the bronchitis, I advised the resumption of the iodide of potassium; and at the time that I last heard from her there had been no reappearance of the asthma, and this was fully two months from the time it was first given.

in the third was not a trace. Moreover, I have seen cases of true gouty asthma in which iodide of potassium has been of no service.

"Of its ultimate and exact *modus operandi* I can neither offer any explanation nor form any reasonable opinion. I am not, however, the less satisfied of its occasional great value, and of the propriety of its use in any case in which it has not been tried."

13. *Diagnosis of Embolism.*—M. BROCA has communicated to the Surgical Society of Paris some observations on the temperature of limbs, in which the principal artery has been obliterated. He related the following case, which shows that the thermometer will determine when gangrene in a limb is not due to embolism.

An old woman had on her foot a slight sore, which became covered by a persistent cicatrix. On December 4th, severe pain was felt in the leg; she had fever, and a black phlyctena was formed around the crust. On application of the thermometer, it was ascertained that there was a fall of 1 per cent. in the entire limb; whereas in embolism the temperature is only affected below the seat of obstruction. Death occurred ten days afterwards. On *post-mortem* examination, there was found to be an atheromatous state of the femoral artery; and its calibre was reduced to the size of the radial by the deposition of fibrinous layers in its interior. The artery was completely obliterated by a clot which had lately formed, and which was the cause of the gangrene. The successive deposition of fibrin explained the gradual retardation of the circulation of the limb.—*Gaz. des Hôpitaux*, Jan. 5, 1864.

14. *Spontaneous Thrombosis of the Left Femoral and Saphena Vein.*—Dr. TUCKWELL relates (*Med. Times and Gaz.*, Feb. 13, 1864) the following case of this:—

A. B., aged 33, has previously enjoyed good health; during the past year has allowed himself but little rest in his profession, and has become thoroughly over-worked. His present illness commenced about a month ago with severe pain in the head, which lasted five or six days without intermission, and left him much weakened. The pain then shifted to the loins, and continued there for two weeks, during which time he was extremely depressed and unable to get about. At the end of this time, rather more than a week ago, he was attacked suddenly in the night by a violent pain in the right side, which seems to have been purely neuralgic, for no signs of pleurisy could be detected at the time; this pain continued for three days and nights, during which time *he lay continually on the left side*, without sleep, and taking no food, till, on the fourth day, it left him almost as suddenly as it had come on. On attempting now to change his posture he found that the left leg was quite numb, that sensation began to return after rubbing the leg for a time, but that, with returning sensation, there came on an intense pain in the lower part of the leg, more especially in the calf; that he soon observed the leg and foot beginning to swell; that the swelling gradually involved the whole leg and extended up the thigh to the groin, the pain becoming generally diffused and intensified as the swelling extended and increased. I saw him on the fourth day after the swelling had commenced, when the following appearance presented itself:—

He is extremely prostrate, unable to raise himself in bed; the eyes hollow; the voice low and changed; skin generally cool, except that of the left leg, which is abnormally hot; pulse 60, very small, thready and irregular, intermitting at every third beat; thorax generally resonant on percussion; respiration feeble, but free from any morbid sound; urine natural. The left leg from the groin to the toes, is enormously swollen, pitting everywhere deeply on pressure, its surface is hot and very sensitive; an indistinct hardness can be felt through the œdema along the course of the femoral and saphena vein as far as Poupart's ligament, above which point it cannot be traced; beneath the œdematosus integuments large superficial veins are seen ramifying along the anterior and outer aspect of the thigh.

Diagnosis.—Thrombosis of saphena and femoral, perhaps of external iliac vein.

Treatment.—To relieve the pain, cold was applied to the whole limb in the form of evaporating lotions, and the limb was supported on pillows. Small quantities of brandy and wine were administered, with milk and beef-tea.

On the day following, Mr. Savory saw the case with me, and gave me the benefit of his valuable opinion. He fully concurred in the diagnosis, but advised that the leg should be wrapped in cotton-wool, and pressed upon the most forcibly the necessity of increasing the quantity of stimulants, bidding me, to use his own words, "measure the quantity not by the glass or bottle, but by the effect produced." From this time, brandy, rum, port, sherry, and champagne were given every two or three hours day and night, till, on the sixth day from the time that I first saw him, he was taking in the twenty-four hours, brandy $\frac{5}{6}$ xij; rum $\frac{5}{6}$ xij; wine $\frac{5}{6}$ xx. The effect of this on the pulse was as follows: It rose from 60 to 94, the intermissions at the same time becoming less frequent, and the volume better and better, till, on the tenth day from the time that the stimulants were first given, and while he was still taking the above quantity, *it felto* 84, and ceased to intermit. His general condition improved, *pari passu*, with the pulse. At the request of the patient, I returned to the cold applications, after having made fair trial of the cotton-wool and found that it made the leg uncomfortable, while the cold relieved the pain in a marked degree. On the twelfth day, the pain having quite subsided, while the swelling remained unchanged, the leg was carefully rolled in flannel bandages, moderate pressure being at first employed and gradually increased, and it was swung from a fracture cradle, with the foot slightly raised. This was continued during a period of seven weeks, at the end of which time the swelling had entirely disappeared. It may be remarked, that the oedema subsided rapidly for the first week after the application of the bandage, but then seemed for a time to remain stationary, and was at last slowly removed. The quantity of stimulants was gradually reduced after the fourth week.

"The circumstances," Dr. T. remarks, "of principal interest in the treatment employed are, the beneficial effect of cold, the value of pressure, and the necessity of stimulants.

"The application of cold—a remedial agent so largely employed in Germany—is strongly recommended by Virchow as the best and often the only means of alleviating the terrible pain that follows the sudden obstruction by an embolus of one of the large arteries of the extremities. The relief it afforded in this case was most marked. Pressure carefully applied and gradually increased by means of a flannel bandage—a plan of treatment employed by many obstetric physicians in the later stages of the puerperal phlegmasia dolens—was here, too, attended with good results. The rapid and manifest improvement in the general condition of the patient, and the restoration of the heart's power in proportion as the quantity of stimulants was increased, sufficiently indicate their importance in the treatment of such cases. And, surely if alcohol acts thus beneficially after the mischief has been done, we cannot avoid the reflection, that the free use of alcohol in wasting diseases may often avert the mischief altogether, and that the stimulant plan of treatment has, at any rate, this much to be said in its favour, that it tends to prevent the formation of thrombi. In the history of this disease we have, certainly, one satisfactory example of the way in which a real advance in pathology leads to a corresponding advance in therapeutics."

15. *Rubeola Netha—an Anomalous Exanthem.*—Dr. BABINGTON brought recently to the notice of the Epidemiological Society an eruptive disorder or exanthem, of an anomalous character which has within the last few weeks been so prevalent, at least in London, as to entitle it to the designation of an epidemic. He had himself seen several cases, and heard of many more. It is a papular eruption, in many respects resembling rubeola, but distinguished from it in that the papule were less distinct, not arranged in crescentic clusters, and do not appear on the limbs, or, at least, but very slightly and rarely. There is also more constitutional disturbance in proportion to the extent of the eruption, and the convalescence is more speedy and complete. It differs from roseola by not being symptomatic of any other disorder, and by being papular in

character, the patches, too, being more circumscribed and duskier in hue. There is also more prominent congestion of the head, and the disease runs a more definite course. From scarlatina the eruption differs in being essentially papular, and by being unaccompanied by any prominent soreness or ulceration of the throat. The prognosis of the affection is favourable, and so far as is yet known it is rarely or never fatal. From the general resemblance of this eruptive epidemic to measles, Dr. Babington proposes to designate it Rubeola notha (illegitimate, or bastard measles). In respect to treatment, Dr. Babington stated that the feverish symptoms accompanying the malady are best met by cooling salines, diluent beverages, and a light diet. Gentle aperients are occasionally required, but during the eruption spontaneous diarrhoea sometimes occurs. The debility during convalescence, which is considerable, indicates tonics and stimulants. Dr. Babington recommended the society to call for further information on the subject of the epidemic, remarking that "the disorder, though comparatively unimportant in itself, deserves to be observed accurately; and it is only through the independent efforts of many that a comprehensive knowledge of any disease can be obtained." He added, however, that it is quite possible that this seemingly trivial disorder may be the precursor of some other of graver import.

The designation proposed by Dr. Babington will meet a difficulty which has been felt by practitioners who have had opportunities of observing this epidemic, and who have been at loss how to name it. The term very happily characterizes the affection, and will doubtless meet general acceptance.—*Lancet*, May 7, 1864.

16. *Trichina Epidemic at Leipzig*.—Dr. E. WAGNER observes that this might naturally be expected from the amount of food derived from the pig consumed in the raw state at Leipzig, and from the great number of times in which encapsulated trichinae have been found in the muscles of persons dying of various diseases. Having met with an instance of this in 1859, he has since then made a point of looking for trichinae, and has found them in greater or less numbers in between thirty and forty bodies. They were encapsulated and generally calcified, but in every instance but two the trichinæ exhibited signs of life on the application of gentle heat.

Between November 7, 1863, and January, Dr. Wagner has had eleven cases of trichiniasis in the living person under his own notice, and he thinks that the symptomatology of the affection is sufficiently distinct now to be able to dispense with exploratory punctures or "harpooning." In almost all these cases the affection remained latent for six or seven days after eating the poisonous food, the earliest symptom being in the mild cases œdema of the face, and in the more severe cases a general febrile condition, accompanied with catarrh of the stomach and slight diarrhoea. œdema in other parts of the body was only observed in three cases. The muscular pains appeared first in the lower extremities, being increased on pressure or movement. Motion of the limbs after long rest was attended by especially severe pain: but in no cases were these pains so great as to prevent all movement. On palpation the muscles seemed in parts quite normal, and elsewhere somewhat swollen and tense. In three cases only was there pain in eating and speaking and hoarseness of voice. In four of the cases which assumed a very grave character there was considerable fever, the pulse rising from 120 to 140, but in the other slighter cases fever was not present. In two cases in which careful search was made no trichinæ could be detected in the stools. Convalescence was tedious, occupying two or three weeks in slight cases, and six or eight in severe cases, the pains of the extremities long continuing, and the emaciation being great.

Two deaths occurred in the persons of a mother and her daughter. The first of these suffered from severe muscular pains until the twenty-sixth day after the poisoning, when she suddenly died while sitting up in bed; and the daughter on the twenty-third day, with all the symptoms of severe typhus. At the post-mortem examination, the blood of the various organs was found to be free of trichinæ, nor did hours spent in the search discover any among the contents of the intestine. The muscles contained numerous trichinæ in the encapsulated

and partly calcified condition, all being alike. Not only the muscular fibres in immediate contact with the trichine, but also others more or less distant exhibited signs of degeneration.—*Archiv der Heilkunde*, 1864, No. 2.

[In the last number of Virchow's *Archiv* (vol. xxix, No. 1) several cases of trichine are referred to by Dr. Santer, of Posen, and two are related by Dr. Tüngel, of Hamburg, in addition to others recorded by him. The latter practitioner believes that the most certain diagnostic signs are those exhibited as the groups of muscles become successively attacked. When these are situated under a fascia, the œdema is felt deep seated before exhibiting itself under the skin, while when the muscles of the face are affected it at once appears there. This affection of the muscle is especially characteristic when it can be observed from the beginning attacking a spot hitherto unaffected.]—*Medical Times and Gazette*, March 26, 1864.

17. *Changes in the Kidneys from Lead Poisoning*.—Dr. LANCERAUX maintains that in the elimination of this poison a change altogether peculiar is produced in the kidneys—a true Bright's disease. The author alludes to cases of fatty degeneration of the kidneys in poisoning by phosphorus, by the acid nitrate of mercury, and by sulphuric acid. In the latter case, he observed that "the cortical substance of the kidneys, of about normal consistence, was dotted with red. In the field of the microscope, there was absence of fat in the tubuli, but destruction of most of the epithelial cells, which formed a finely-granular grayish mass. The walls of the canaliculi appeared intact, but the interstitial connective-substance was altered, and in course of proliferation (nephritis)." The author says that the renal affection coexistent with lead poisoning is not a simple coincidence—that he has always found its characters very analogous, if not identical. He thus sums up the results of his investigations in three cases: There was, 1st, an advanced stage of lead poisoning, with cachexy; 2d, a lesion of the kidneys, always characterized by inequality of their surface; atrophy of their cortical substance; hyperplasy of the connective-substance; destruction, or even the disappearance of the cellular elements, with albumen present in the urine. This renal affection only succeeds to an advanced stage of lead disease.—*Brit. and For. Med.-Chir. Rev.*, April, 1864, from *L'Union Médicale*, Dec. 15, 1863.

18. *Fatty Degeneration of the Active Elements of the Liver, the Kidneys, and the Muscles of Animal Life, in Poisoning by Phosphorus*.—Dr. LANCERAUX says: "Fatty degeneration of several organs, and alteration of the composition of the blood, producing a kind of haemorrhagic diathesis, are the anatomical disorders consequent upon the absorption of phosphorus paste. These lesions may be summed up as partial or general fatty degeneration of the active elements of the liver, the kidneys, the heart, and voluntary muscles, without any concomitant alteration of the cellular or tubular elements of the brain-centres, or nervous cords; numerous hemorrhages, without apparent alteration of the blood-globules, or the presence of foreign matter in the blood: diminution in the quantity of fibrin." To this the author adds finally, that "there exists a manifest affinity of causation between phosphorus poisoning and degeneration of the hepatic cells, of the epithelia of the kidneys, and of the muscular fibres of animal life. This degeneration depends on the direct action of phosphorus on the histological elements in question; it is not the consequence of either a lesion of the nerves, because the nervous system remains intact, or of a modification of the blood, because this liquid shows no appreciable change other than a diminution of fibrin coming on in the last stage of the disease."—*Brit. and For. Med.-Chir. Rev.*, April, 1864, from *L'Union Médicale*, Sept. 1, 1863.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

19. New Operation for Obtaining Union of an Ununited Fracture, with Remarks on its Application in Certain Cases of Recent Fracture.—Mr. E. R. BICKERSTETH, in a communication made to the Royal Medical and Chirurgical Society (March 8, 1864) stated that in bringing this subject before the attention of the society he proposed to mention some cases that had occurred in his practice to show the successive steps by which he arrived at the process in question. He had frequently tried, in vain, friction, acupuncture, and subcutaneous division; and though resection of the ends of the bone had been successful in some instances, it was a proceeding involving a considerable risk to life. Dieffenbach's method had proved to be more successful; but this operation, though conducive to the formation of new bone, in no way provided for what was of paramount importance, viz., absolute immobility of the opposing fragments. The large external wound and injury done to the soft parts in introducing the ivory pegs were also objections to this operation. Recognizing the happy influence of Dieffenbach's plan of exciting ossific deposit, and at the same time feeling the importance of keeping the ends of the bone in a condition of absolute immobility, the author was induced to try a modification of the operation; and in the case of a man admitted under his care, at the Liverpool Royal Infirmary, with an ununited fracture of the radius, he drilled a hole through the ends of both fragments, and, passing a stout wire through it, secured the bone in perfect apposition. Union took place in seven or eight weeks, but on endeavouring to remove the wire so much traction was necessary that it caused the fracture again to be ununited. The difficulty of removing the wire induced the author to think of some other plan not open to this objection; and, in the case of a man with an ununited fracture of the thigh, by means of a common Archimedean drill, he bored two holes in such directions that each passed obliquely through both ends of the fractured bone, and into each introduced a steel rod with a screw at the end. To do this it was necessary to make an incision three inches in length. Much constitutional disturbance followed, the wound suppurating freely. In ten weeks the splints were removed, but no union had taken place. The limb was then confined in gum and chalk bandages. Symptoms of pleuro-pneumonia came on, and he gradually sank. A post-mortem examination showed tubercular deposits in the ends of the bone and other parts of the body. There was no attempt at repair at the seat of fracture, except where the drills had pierced the bone, and here there was a deposit of new bone. This proceeding showed that it was quite feasible to fix the bone in the manner described without exciting too much inflammatory action; and also that the steel rods caused the formation of new bone. The next case was a fracture of the lower maxilla, where the bones had united in such a position as to render the patient a most unsightly object. As the incision that would be necessary in this instance for the purpose both of putting the bone into proper position and removing the deformity of the soft parts would not allow the use of external splints or supports, and as it was found impracticable to effect this object by fixing the teeth by an appliance within the mouth, it was absolutely necessary that some means should be devised by which the divided portions of the jaw could be securely fixed; and it occurred to the author that pegs or nails would answer the purpose, especially as he had already observed their presence caused so little inconvenience. Accordingly, at the operation, the plan just mentioned was carried out, and the apposition of the fractured portions was secured by means of two round-headed nails. They most effectually answered their purpose, and no external splint or bandage was required. The case did well, no undue action being set up. On the twenty-second day after the operation, one of the nails came away. The patient left the infirmary perfectly well, the jaw being firmly united in its proper position, and the deformity of the soft parts removed. One of the nails still remained in; and the last account states

that its presence caused no inconvenience. The third case recorded was one that presented many points in common with the one just narrated. No external incision was made, and ordinary drill-heads were substituted for nails. The result was everything that the author could have wished. These cases show how regularly and with what good effect fractured bones may be fastened together. Surgeons have ever recognized the use of sutures with regard to the soft parts. Why should we not, in cases of difficulty arising from an inability to keep the surfaces in proper apposition, adopt the same plan with the bones? Might not this process be applicable in some cases where division of the tendon-Achillis is required, or where such an operation as sawing off the ends of the bones is indicated? From a consideration of the cases narrated, Mr. Bickersteth proposed to treat an ununited fracture by passing one or more drills through the broken ends of the bone in such a manner as to secure their perfect immobility, and without making any external wound beyond that caused by the entrance of the drill. The limb should then be secured by properly-adjusted splints, and kept at perfect rest. After two or three weeks the drills may be removed, and water-dressing applied to the punctures. For several weeks after it would, of course, be desirable to continue the use of the splints. In conclusion, the author begged to place upon record three cases of ununited fracture recently treated by his friend, Mr. Fletcher, on the plan that he (Mr. Bickersteth) had suggested, and in each the result had been most satisfactory.

Mr. FERGUSSON said that he scarcely remembered to have heard a paper of greater surgical interest than the one just read. It had the merit of bringing out much that was going on in the modern practice of surgery, and he thought the paper would lead to greater improvements in practice. Here was further proof, he continued, of the advantage of wire and metal in instances in which in former times we were loth to use such materials.

Mr. HOLMES COOTE rose to correct what he believed was a very general and erroneous impression as to the views of Dieffenbach. This surgeon used to cut down to the ends of the bones and pass in ivory pegs with the hope of creating irritation; but, if he could do it easily, he used also to fasten the ends of the bones together. Mr. Coote thought that three classes of cases ought to be distinguished—first, those in which there was union in good time; second, those in which union was simply retarded; and third, those in which union could not be obtained, as the ends of the bones were in a state of fatty degeneration. In the third no good results could be hoped for.

Mr. BARWELL, while agreeing with what had fallen from Mr. Holmes Coote concerning the degenerated condition of bones, considered that such condition was the result, more frequently than the cause, of non-union. It was a law of animal nature that any organ losing its function should degenerate. Thus, when a bone lost its power of support, the surrounding muscular pressure and other conditions of its healthy life, it would surely degenerate; but until that degeneration had reached a high point it might still be restored. A remarkable case had occurred to him lately, which would also show that in certain instances the admirable plan proposed by Mr. Bickersteth would be unavailing—as in cases where the non-union was produced by a large quantity of soft parts intruding between the fractured ends. The case alluded to was as follows: About eighteen months ago a man broke his arm about two inches and a half above the elbow. He was admitted into the Charing-cross Hospital. The fracture united well, and the man was discharged cured. The same night, however, he got very drunk, and broke his arm again, but took no notice of the circumstance, continuing drunk for about a fortnight. Two months ago he again entered the hospital with a broken arm. As Mr. Barwell had been for some time taking the duty of his colleague, Mr. Canton, this case came, about a fortnight ago, under his observation, and he determined to operate. The upper and lower fragment was on the outer side, its lower end overlapping the head of the radius. The inner end of the lower fragment was half way up the inner side of the arm. The movement to and fro of this portion was very considerable; but there was always a wide interval between the two bones, which was occupied constantly by the anterior brachial muscle, sometimes also by part of the biceps, and in certain positions it seemed as though the artery and nerve also got be-

tween the fragments. The man having been placed under the influence of chloroform, Mr. Barwell made an incision two inches long over the outer fragment, and turning out its end, sawed out a wedge-shaped piece, so as to leave an angular gap or notch in the end of the bone. The inner fragment lay so far away from the wound, and in such close proximity to the artery and nerve that the greatest care was required in getting its end to protrude at the wound. This, however, was accomplished without any untoward accident, and the end was cut into a wedge shape, so as to fit with some degree of accuracy the interval in the upper fragment; traction was made upon the arm, and the two portions fitted together, and with the aid of a splint they retained perfect apposition. A singular condition of bone revealed itself during the operation—namely, that the periosteum on the upper fragment was loose, and could be slipped up off the bone as a man might turn up his shirt-sleeves. The tissue was carefully replaced, yet, on account of this condition of bone, he (Mr. Barwell) could not but look at the issue of the case with some anxiety. The man had had as yet (ten days afterwards) no bad symptom.—*Med. Times & Gaz.*, March 19, 1864.

20. *New Method of Operating for Strangulated Hernia.*—Professor MAX LANGENBECK observes that this procedure might perhaps be most fitly termed the subcutaneous reposition of hernia. An opening is made in the skin only large enough to admit the forefinger, not just over, but on one side of the hernia. The finger introduced into the wound easily thrusts aside the connective-tissue, glands, fat, &c., and pursues its course until it reaches the inguinal canal or the fossa ilio-pectinea, as the case may be, passing under the skin very much as a bullet does in gunshot wounds. Having reached the point of stricture, the finger practises the subcutaneous isolation of the hernial tumour, destroying any recent adhesions and external exudative structures which may impede reposition, and which are, indeed, often a result of the employment of the ordinary means of reduction. In most cases, this isolation of the hernial tumour can be speedily and easily accomplished; and its size and degree of tension, as well as the thickness of its sac, may be approximately decided upon.

Having reached the point of stricture, we should, in femoral hernia, feel for the horizontal ramus of the pubis and Gimbernat's ligament, and in inguinal hernia for the internal crus of the abdominal ring, and gently compressing the surface of the nail against the neck of the sac, pass the finger in beside it. No great resistance is offered to this by the incarcerated hernia; and by the gentle pressure employed, not infrequently a certain amount of peristaltic action and increased protrusion of the intestine is produced, together with more or less separation of the recent exudation. In the case of femoral hernia, the finger feels distinctly with its volar surface the sharp edge of Gimbernat's ligament, and at its lower edge the horizontal ramus and pubic ligament upon which it rests. In order to produce dilatation, Gimbernat's ligament is to be ruptured through part or the whole of its extent, or separated from its insertion. The ligament yields to the pressure made by the nail with an audible cracking sound. In inguinal hernia, the end of the finger meets with a greater resistance from the inner crus of the abdominal ring than from Gimbernat's ligament. The resistance is usually, however, overcome by a steady boring motion of the finger against the point of insertion in the pubis. When the resistance cannot be thus overcome, Dr. Langenbeck employs what he calls an "incision ring." This, constructed of wood or metal, resembles a signet-ring, made as thin as possible, and having affixed to its surface, in the direction of the long diameter of the finger, a cutting edge projecting about $1\frac{1}{2}$ lines. This ring is placed on the finger-point, the cutting edge being on its volar surface, and the finger is introduced through the short subcutaneous canal which it had already made as far as the annulus. By pressing the cutting edge against the sharp edge of the internal crus, this is divided with complete safety to the intestine, which is protected by the dorsal surface of the finger. In order to prevent the slipping off the ring during the withdrawal of the finger, it should be secured by a ligature. The incision made, the necessary dilatation is accomplished by means of the finger. In the case of external inguinal hernia, the resistance of the ring is more easily overcome. As soon as the stricture has been removed, a retractile motion is set up, and the

hernia, as a general rule, is spontaneously reduced. Usually it at once passes into the abdomen, sometimes waiting a minute until after the finger has removed some adhesions from around the orifice. When the adhesions are old, and very firm, it is best to rest content with removing the constriction without attempting reposition. After the finger has been withdrawn, there is but a slight appearance of injury at the seat of the operation, and the place where the hernia lay is completely covered with the skin. In none of the author's ten cases did the operation occupy more than five minutes, and in most of them but two. The subsequent course of these cases was also highly favourable, the wound readily uniting, the patients all leaving their beds between the fifth and tenth day, a broad truss being first applied.

Dr. Langenbeck contrasts at some length his procedure with the ordinary mode of treating hernia, and maintains that, by reason of its much greater safety, and the more rapid recovery which ensues, it is infinitely to be preferred.—*B. & F. Med.-Chirurg. Rev.*, April, 1864, from *Allg. Wien. Med. Zeit.*, 1863.

21. Opening of the Colon in the Left Lumbar Region for Intestinal Obstruction.—Dr. SAMUEL SULLY read before the Royal Medical and Chirurgical Society four cases of intestinal obstruction, in three of which the colon was opened in the left lumbar region. Mr. S. after acknowledging the value of Mr. Caesar Hawkins's contributions to the subject, proceeded to detail his own experience. The operation of opening the colon in the loin, in properly selected cases, he believed to be neither dangerous nor difficult; nor was it contraindicated by the occasional passage of small quantities of feculent matter. The results, moreover, of the operation were far from unfavourable even where the stricture was due to malignant disease, and the relief afforded was so instant and decided as in the interest of humanity imperatively to call for surgical interference. The first case, that of a labourer, aged 28, was one of rectal cancer, advancing with unusual rapidity, and dating only five months from admission. At the onset, diarrhoea, with slimy and bloody motions, was followed by intermittent symptoms of obstruction, which before long became constant. On admission the abdomen was frightfully distended; the rectum did not admit the passage of even a small elastic catheter. Three days after, the descending colon was opened in the left lumbar region. Much flatus escaped, but hardly any feces until some hours after the operation. This was followed by rapid improvement in every respect. Sixteen days later the patient left his bed, wearing a tent in the wound, and continued in fair health for three months, when chronic peritonitis set in, probably from extension of the primary disease, and slowly advanced to a fatal termination. The second case, that of a railway clerk, was of eighteen months' standing. It had been very gradual in its access, and palliated during the last month by passage of rectum bougies twice a week. On admission, the symptoms, both local and general, were very severe. At the operation much feculent matter was evacuated, and the relief obtained was very decided, lasting for six weeks, when sudden collapse, partially due to mental causes, was very rapidly followed by death. Post-mortem examination was refused. The third case had occurred very recently. A bank cashier, aged fifty-four, of active and temperate habits, had begun about a year previously to suffer from constant tenesmus, with from five to seven evacuations daily; these were on three or four occasions accompanied by blood. Seven months later he consulted the author, and extensive carcinoma was found partially occluding the bowel. During the following five months he could evacuate the bowel without much distress; but at the commencement of the present year complete obstruction took place, accompanied by great distension of the abdomen, for which, ten days later, he was admitted into St. Thomas' Hospital. On admission he complained of dyspnoea and retching, but without actual vomiting. A nodular mass could be felt projecting into the rectum, hard and inelastic, almost obliterating the canal. The following day an incision was made midway between the last rib and the iliac crest, horizontal, with a slight inclination upwards and outwards, from three inches and a half to four inches long. The erector spinor was partially divided, and then the quadratus lumborum inwards, on a director,

to the extent of an inch and a half. The abdominal fascia was similarly treated, leaving the bowel exposed; this was fixed by means of two silk sutures to the edges of the wound, and the gut opened transversely by means of scissors. Very little blood was lost, and three pints of liquid feces came away, with intense relief. During the afternoon more liquid fecal matter was discharged per anum. On the following day the pulse was 86; he had slept well, and eaten a chop for dinner. The wound showed no inclination to close, and slight prolapse of the bowel was easily checked by an oiled sponge plug. For six days he did very well, except that there was a tendency to the formation of bed-sores. Thirteen days after the operation he sat up two hours daily, and seemed better, feces passing both by the wound and anus. But on the twenty-first day collapse, vomiting, and swelling of the face came on, followed by great dyspnoea and extensive mucous crepitus in the chest, which increased so rapidly as to carry him off in a few hours. At a post-mortem examination, tubercle was found in both lungs, which were oedematous, with much injection of the bronchial tubes. The cæcum was distended by gas, and was adherent to the sheath of the right psoas muscle, in which was an abscess extending to its origin, containing several ounces of thin fetid pus. There was a free opening in the descending colon, where it was uncovered by peritoneum, and its edges were adherent to the wound. The sigmoid flexure contained solid fecal matter. The rectum was embedded in a firm mass of infiltrated tissues, adherent to the pelvis posteriorly and to the bladder in front. The deposit was firm, fibrous, and juicy. A softer growth projected inwards round the whole circumference of the bowel, so as almost entirely to obstruct it; below the tumour was an ulcerated surface of the intestines, two or more inches across, where the coats of the bowel were entirely destroyed. The scirrhus mass under the microscope showed fibrous tissue, with cells of various sizes, mostly round, and containing minute oil globules. The liver contained several masses of scirrhus, most of them presenting traces of central degeneration. The fourth case resembled the preceding up to a certain point, where it diverged in consequence of the operation not having been performed, and the patient dying rapidly from rupture of the bowel. W. C., aged 55, a member of the College of Surgeons, was a ruddy and robust man, of very active habits, subject to no illness except occasional attacks of gout. In April, 1863, he had a severe attack of what he termed colic, for which his father-in-law, a retired practitioner, successfully treated him. Even at that period Mr. Solly saw reason to diagnose stricture of the large intestine, though the patient attributed his symptoms to gout, and did not formally request his advice until two months later. On a first visit he was in great pain, and the abdomen was so tender as to preclude close examination. Palliative treatment mitigated the symptoms for a fortnight, and then the author was again hastily summoned to Tunbridge Wells. Examination of the rectum by means of the finger and a soft bougie revealed an obstruction at its upper part. The abdomen was intensely distended with flatus, although small quantities of fecal matter were once or twice evacuated. It was suggested to open the descending colon in the left lumbar region, but postponed for the opinion of an eminent surgeon, who came to the conclusion that it was not desirable. Accordingly Mr. Solly unwillingly relinquished the proposal under protest. Within twenty-four hours the patient died in great agony, with symptoms of ruptured bowel. On post-mortem examination, the abdomen was tense, and prominent above the umbilicus. The lower part of the descending colon presented a small perforation, from which half an ounce of fecal matter had escaped. There were no signs of recent peritonitis; and the intestines were healthy except at the sigmoid flexure, where a mass occupied the interior of the gut, of a scirrhus hardness, measuring over three inches across. Several pulpy, lobulated portions of this occupied the calibre of the tube, fitting into each other like cogs of wheels. No other morbid condition was found. Before opening the abdomen a trocar had been introduced at the spot where the proposed operation would have been performed, and its point was found in the intestine an inch and a half above the diseased mass. In commenting on this case, it was noticed that death had obviously been the result of obstruction, not of any rapid malignant growth, and that life would undoubtedly have been prolonged by the

operation for an indefinite period. Moreover, the valvular form of the obstacle was pointed out, and the possibility of the original channel becoming pervious when the accumulation above was removed by operation, as had actually occurred in the third case. Lastly, attention was directed to the fact, already noticed by Mr. Quain in his work on this subject, that obstruction might be complete and prove fatal even when the autopsy did not exhibit total occlusion of the intestinal canal. (A drawing of a portion of the intestine in this case was exhibited.)

Dr. Bell rose for the purpose of making a few remarks on the interesting paper which had just been read, not only from the impression that in advocating a new operation or mode of treatment it was of the utmost importance that the data on which we proceed should be correct and well founded, but because one of the cases (the fourth) referred to by Mr. Solly occurred in a patient of his (Dr. Bell's), in regard to which he thought he could give such information as would enable the society to come to a just conclusion on the subject. This patient came under his care in the month of March, 1863, suffering from dyspeptic symptoms; these were relieved, and he then went on a visit to some friends, where he over-exerted himself, and he returned worse in health than when he left home. He called on Dr. Bell soon after his return, and left a message saying he wished to see him. Dr. Bell in consequence saw him on May 6, and from his sufferings, was induced to examine him in the recumbent posture, when he discovered a tumour, of the size of a cricket ball, about three inches below the umbilicus and rather to the left of the median line. The tumour could be readily distinguished from the folds of the intestine by percussion, which, owing to the tenderness, required to be done with great gentleness. He was surprised to find that Mr. Solly's report was totally at variance with the facts of the case as they came under his (Dr. Bell's) observation in the course of his attendance on the patient, during which he saw him once or twice a day. Peritonitis appeared on the 10th of the month, and on the 11th he was surprised, on making his afternoon visit, to find Mr. Solly sitting in consultation with the father-in-law of the patient: he was not aware that he had been sent for. Immediately on his entering the room, Mr. Solly told him he had resolved to operate on the patient, which he (Dr. Bell) decidedly opposed. He certainly felt aggrieved by the statement that had the operation been performed the patient would still have been alive: for Dr. Ferguson, after carefully examining the patient, fully corroborated his (Dr. Bell's) view of the case, and said distinctly that the operation was not justifiable, and never could become so during the lifetime of the patient. The same opinion was given by Mr. Ferguson, who considered the great risk was that the patient would die on the table. During the whole course of the case the bowels were frequently moved by enemata. He (Dr. Bell) left to Dr. Wardell the description of the *post-mortem* examination, which fully bore out the correctness of his opinion. With regard to the diagram on the wall, it was the most fanciful production he had ever seen: it resembled nothing human.

Dr. Wardell said that on May 7th Dr. Bell desired his opinion on the fourth case related in the paper read by Mr. Solly, and that he gave it as being one of a malignant tumour pressing upon some part of the large bowel. The history and symptoms all warranted this conclusion. The patient's friend, Dr. Branson, (consulting physician to the Sheffield Infirmary), consulted with them on the 9th, when he fully and entirely agreed with them. On that day a large injection was given, which thoroughly cleared out the colon, but did not remove the tumour in the left hypogastrium, which was round, hard, and the size of a cricket-ball. Acute peritonitis set in. On the 11th, Mr. Solly was telegraphed for. On his arrival, to Dr. Wardell's astonishment, he wished to perform the very serious operation for anus, which he (Dr. Wardell) stoutly opposed, because the colon was unquestionably well-nigh empty; because he regarded the case as one of acute peritonitis, caused, it is true, by contraction, but not occlusion of the passage; because it was almost certainly cancer; because fecal matter could pass of the size of walnuts; and because he conceived his chance of life greater by medical than surgical treatment. Dr. Ferguson, of London, came down on the 27th, when he confirmed the diagnosis, and was utterly against the

operation. Mr. Fergusson was also summoned, and on the 29th he deliberately gave it as his opinion also that opening the colon was not warrantable.

Dr. Wardell then distinctly affirmed that the description given in the paper just read was most incorrect. Mr. Trustram denied the existence of peritonitis, when there were pints of serum (which ran out on the table), bands of lymph, agglutinated and injected intestines. The colon contained but little fecal matter. The rupture was not a slit, but punched, round, the result of ulcerative absorption. The calibre of the bowel was much encroached upon by annular nodules of colloid cancer, but not occluded. Faecal matter continued to be passed of the size of walnuts. He maintained that it was not a case for operation, and Dr. Ferguson and Mr. Fergusson still endorse this opinion.—*Med. Times and Gaz.*, April 23, 1864.

22. *A New Method of Procuring the Consolidation of Fibrin in certain incurable Aneurisms.* By CHAS. H. MOORE, with the Report of a Case in which an Aneurism of the Ascending Aorta was Treated by the Insertion of Wire. By CHARLES MURCHISON, M. D. In this joint paper, lately read, March 22, 1864, before the Royal Med. and Chirurg. Soc., the theory of the operation was first described by Dr. Moore. Dr. Murchison furnished the report of the case, with medical comments upon it. For the surgical remarks, Mr. Moore was alone responsible.

In February, 1863, Mr. Moore had been led to review the conditions of such aneurisms as could not be surgically treated through the artery, and had devised a method of producing consolidation of them in accordance with the mode of their natural cure.

The principles involved in this method were—1, that large aneurisms can only be benefited by the deposition of fibrin within them; 2, that the natural means of obtaining fibrin from the blood are inadequate, because it can only settle in layers on the wall; 3, that in the central part of an aneurism there is a large quantity of blood with fibrin ready to collect on any apt material; 4, that fibrin may be elicited from arterial blood by exposing a foreign body in it. Two cases were quoted in which this had occurred: one, an instance in which gangrene of the leg had resulted from plugging of the arteries by fibrin detached from a needle in the left ventricle; the other, that of a sailor, who died three days after being shot, and in the interior of whose ascending aorta was a bullet imbedded in fibrin.

The foreign body which, according to our present knowledge, would produce least irritation was wire. If a large quantity were coiled in an aneurism, it would attract fibrin, as the twigs do in whipping freshly-drawn blood, support the mass which it entangled, and lead to the cavity of the aneurism being eventually filled. The wire might be passed in through a small canula, with care not to leave the last end in the minute wound, and not to direct a coil into the orifice of the artery.

Only a sacculated aneurism could be so treated, not one which had two orifices, since fragments of fibrin would be broken off by the force of the current. Brasdor's operation might be previously required in some parts. This danger might be incurred in a sacculated aneurism also, if wire enough were not introduced, because of the large intervals which would be left between the few coils of wire. The wire would remain in the solidified aneurism, and be harmless.

Mr. Moore then described the operation by which the foregoing proposal might be carried out.

Report of a Case of Saccular Aneurism of the Ascending Aorta projecting through the Anterior Wall of the Left Side of the Chest.—Daniel D., aged 27, became a patient at the Middlesex Hospital, under Dr. Murchison, on November 10, 1863. Eight years before, he began to suffer from palpitations and dyspnoea, and after some months he had an attack of haemoptysis. The haemoptysis recurred at intervals, and in November, 1862, he first noticed a pulsating swelling in front of the chest, to the left of the sternum. This increased with considerable rapidity, and the patient now became subject to severe attacks of angina pectoris. At the time he first came under observation, the tumour was situated in the angle formed by the left clavicle and the left margin of the sternum; it

measured ten inches in circumference at its base, and projected about two inches from the wall of the chest; its surface was rounded, and tolerably uniform, except at the upper part, where there was a tendency to point. Over the whole surface of the tumour distinct pulsation could be felt, each beat corresponding to the impulse of the heart. Nothing resembling an aneurismal bellows-murmur could be heard; but both cardiac sounds, and particularly the second, were louder over the tumour than at the base of the heart. There was dulness on percussion to the right of the tumour, over a space measuring two inches transversely, and three inches from above downwards. The apex of the heart could be felt beating between the fifth and sixth ribs. The cardiac dulness was slightly increased, but the sounds heard on auscultation were normal. There was no inequality of the arterial pulse on the two sides of the body. The voice was normal. The patient had an occasional cough, and expectorated a viscid mucopurulent matter, but there was nothing peculiar in the character of the cough. Over the whole of the left side of the chest there was comparative dulness on percussion, with coarse, at some places tubular breathing, and sub-crepitant râle. On the right side of the chest the percussion was clear and the breathing puerile. The appetite and digestion were good, and the bowels regular. There was no dysphagia, and no pain or tenderness at any part of the spine. The pupils were of normal and equal size. On Nov. 20, and again on Dec. 28, the urine was ascertained to be free from albumen.

After the patient was admitted into the hospital, on the 20th of November, the attacks of angina almost entirely ceased. The pulse varied from 104 to 116 when the patient sat up, but would fall to below 100 when he lay down. The size of the tumour continued to increase, until, on the morning of January 7, 1864, it measured $16\frac{1}{2}$ inches at its base, and projected $2\frac{2}{3}$ inches from the wall of the chest. The tendency to point at its upper part became more decided, and the integuments at this part were much attenuated, and assumed a dusky-red discolouration, while occasionally they were the seat of pricking pains, and were slightly tender. These changes were most marked during the last week of December and the first week of January. The patient's general health notwithstanding did not suffer. He ate and drank well; he got up daily, and walked about the ward. On the evening of January 6 he played a game of draughts with another patient, and on the following morning he was up and walking about as usual.

Early in January it became obvious that the bursting of the aneurism through the integuments could not long be delayed. It was accordingly resolved to recommend to the patient Mr. Moore's proposed operation. During the month of December this operation had been carefully considered, but it was then deemed unadvisable to have recourse to it. It was now explained to the patient that the procedure in question offered some chance of prolonging his life, although in itself it was not free from danger. The patient at once assented, and the operation was performed on January 7, at 1.30 P. M.

The operation consisted in the introduction of a quantity of fine iron wire into the aneurism, with the object of inducing coagulation. A small pointed canula was inserted into the tumour, and the wire was passed in through this without difficulty. The operation occupied one hour, and the quantity of wire introduced was twenty-six yards. It gave rise to no pain or inconvenience excepting a slight and transient feeling of faintness. The quantity of blood lost did not exceed half a fluidounce.

The immediate effects of the operation were a reduction of pulse from 116 to 92, an almost complete cessation of the pulsation in the tumour, and a diminution in its size. Immediately before the operation the circumference of its base was $16\frac{1}{2}$ inches; at the close of the operation it was 16 inches. These changes began to be noticed soon after the commencement of the operation, and became more marked as it was proceeded with. At 11.15 P. M., the patient was asleep, and his pulse was only 78. He slept comfortably during the night, and no bad symptom until the following morning.

On January 8, at 9 A. M., the patient was seized with a fit of rigors lasting three-quarters of an hour, and followed by great pain in the back of the neck and some pain in the tumour. At 1 P. M. the pulse had risen to 144, and was

full and bounding. The action of the heart was tumultuous, and all the arteries of the body could be felt throbbing with considerable force; but there was no difference in the force or volume of the beat on the two sides of the body. The patient complained of great pain in the tumour when he moved. The tumour was already somewhat larger than before the operation, and the dusky discolouration was of a deeper tint. There was intense thirst and great restlessness: the skin was dry and very hot; and the respirations were 40. At twenty minutes past 1 P. M. the patient was bled to the extent of eighteen ounces, and at half past 3 P. M. twelve ounces more blood were abstracted. After the second bleeding twenty minimis of Battley's sedative solution were administered.

From these measures the patient derived temporary relief, but he had a restless night, and at half-past 6 A. M. of the following morning (January 9) he had a second attack of rigors. At 1 P. M. he had a third attack. At half past 1 he was in great distress, owing to pain in the tumour and at the back of the neck. The tumour was extremely tense and decidedly tender, particularly at its upper part. Its circumference at the base measured $1\frac{1}{4}$ inches more than before the operation. Distinct pulsation could be felt again at its upper part. The pulse was 136 and soft; the action of the heart was less tumultuous, and there was no abnormal cardiac sound. Large and repeated doses of opium and digitalis were now commenced. At half-past 10 P. M. the pulse had fallen to 126, but the patient complained of being afraid to cough on account of a severe jerking pain in the tumour which the effort to do so always induced.

On January 10, at 10 A. M., the patient had taken seventy-three minimis of tincture of digitalis, and the equivalent of almost ten grains of opium, during the preceding twenty-one hours, and the result was that he was in less pain, the pulse had fallen to 104, and the tumour was slightly reduced in size, its circumference being half an inch less than on the preceding day. At 7.30 P. M., however, he was seized with a severe burning pain in the tumour, and a feeling of tightness as if he were going to burst. The tumour was larger and more tense than ever; the pulse rose to 132: the heart's action was again more impulsive, and there was intense thirst. To-day it was noted for the first time that the pulses in the right temporal and radial arteries were slightly fuller than in the corresponding vessels on the left side.

Opium in large and repeated doses, along with digitalis, was persisted with. In the course of two days and a half (commencing on January 9) as much as the equivalent of twenty-seven grains of opium was administered. The treatment, however, failed to give relief. The tumour increased rapidly in size, and on the 11th distinct pulsation could be felt at several parts of its surface. The radial pulse was 128, small and compressible, and still fuller on the right side. The beat of the right anterior tibial artery was also decidedly fuller and stronger than that of the left. The cardiac impulse was extremely feeble. The respirations were performed chiefly by the diaphragm and the muscles on the right side of the chest; the left side of the chest was almost motionless. The whole of the left side of the chest in front, unoccupied by the tumour, was dull on percussion, and no respiratory sound could be heard on this side, except immediately below the clavicle. Brandy and other stimulants were given, but without any decided result.

On the morning of the 12th the patient was evidently sinking. The pulse was about 136, but was so weak as to be counted with difficulty. The circumference of the tumour at its base was now $3\frac{1}{2}$ inches more than before the operation, and the urine passed during the night was found to be loaded with albumen. At 11 A. M., four days and twenty hours and a half after the operation, the man died.

An autopsy was performed a few hours after death. The walls of the external tumour were formed by the integuments and fibres of the pectoral muscle, infiltrated with serum. They were nowhere less than a quarter of an inch in thickness. The skin covering a great part of the tumour presented a deep livid hue. The interior of the tumour was filled, for the most part, with a fibrinous coagulum, enveloping and imbedded in the coils of wire, and firmly adherent to the surrounding walls. The rest of the cavity contained fluid black blood. The interior of the outer tumour was nowhere lined with a prolongation of the arte-

rial coats; but it communicated with the proper aneurismal sac within the chest, by two large openings in the first and second left intercostal spaces, the intervening rib being bare and eroded, and at one place broken through. The aneurismal tumour within the chest was about the size of a man's fist. It lay immediately behind the sternum; it encroached slightly upon the upper lobe of the left lung, and inferiorly it rested upon the right auricle. It was partially filled with a fibrinous coagulum, which was continuous with that in the outer tumour, and was adherent at one part over a space measuring about one-third of an inch in diameter. It communicated by a circular opening, scarcely so large as a sixpence, with the ascending aorta. Through this opening a clot projected from the aneurism into the vessel, and extended downwards into the heart, and upwards into the arch. The greater part of this clot was evidently of *post-mortem* date; but part of it, close to the opening, was pale, firm, and laminated. There was considerable atheroma of the coats of the thoracic aorta. The pericardium contained about eight ounces of turbid serum, and its opposed surfaces were coated with a thin layer of recent lymph. The upper part of the parietal pericardium presented a patch of livid discolouration, about the size of a florin; and at the centre of this patch the cavity of the pericardium was merely separated from that of the aneurism by a delicate membrane. It was at this part of the aneurism that the coagulum was adherent. The heart was slightly hypertrophied. Its valves and muscular tissue, and likewise the coronary arteries, were healthy. The left lung was everywhere firmly adherent, and its pleura much thickened. On section, numerous cavities were observed, evidently resulting from dilatations of the bronchial tubes. In the intervening spaces a firm fibrous tissue took the place of the normal vesicular structure. The right lung was for the most part healthy. Both kidneys contained a number of circumscribed abscesses, varying in size up to that of a small pea. A cluster of six of these small abscesses was found at the apex of the left kidney. In the cortical substance of both kidneys a number of patches of yellowish deposit, of a large size, but less defined outline, were also observed. On microscopical examination, this appearance appeared to be due to the presence of a granular exudation deposited between the uriniferous tubes. The liver was large and fatty. The other parts of the body could not be examined.

After recording the history and *post-mortem* appearances of the case, Dr. Murdochison enumerated some of the more important features of clinical interest, independent of the operation, which it presented.

In his concluding remarks, Mr. Moore referred first to the circumstances of the operation, and to its early effects, which were highly satisfactory. So much fibrin appeared to have collected at the end of an hour that the pulsation of the tumour and its sharp second stroke were no longer perceptible; the aneurism had much diminished in size; the pulse, which, notwithstanding medicines, had beat 112 for weeks previously, and was 120 before the operation, had fallen to 92, and at night was about 80. This unlooked-for abundance of the fibrin, accumulated not by an inflammatory, but by a mechanical process, was an unprecedented circumstance. Its effects could not be foretold. It appeared to have caused local inflammation and the rigors, with great acceleration of the pulse. No aneurism could long resist such a pulse. Death had probably resulted from acute pericarditis, which was induced, not by continuity with the inflammation outside the chest, since neither the inner aneurism nor the pleurae were inflamed, but incidentally by the imminent bursting of the intra-thoracic aneurism into the pericardium. No fragments of the clot of fibrin, large enough to be detected by the naked eye, had been detached, but microscopic portions were supposed to have existed in the kidneys. Neither the old nor the recent disease of the kidneys had actually caused death, which was due to the changes about the chest, and was, through the pericarditis, an indirect and not inevitable consequence of the operation. No coil of wire had passed through the opening of the aneurism.

Three facts appeared to Mr. Moore to justify a repetition of the operation, or of some modification of it: 1. The separation of fibrin upon the foreign body, and its rapid deposition. 2. The exemption of the inner aneurism from inflam-

mation, probably to be accounted for by its possessing a lining membrane, which the outer cavity had not. 3. The firm adhesion of the clot to the wall.

Not having yet thought of a more suitable foreign body than wire, he had but two modifications of the operation to suggest: 1. The introduction of a smaller quantity. The objections to this had already been pointed out. 2. The use of slender needles as temporary means of procuring the consolidation of the fibrin. The safety of this must depend on the number of needles which might be inserted, the gentleness with which they should be withdrawn, and the period at which fibrin so procured should acquire a sufficiently firm attachment to the wall of the aneurism to allow of the artificial support of needles being dispensed with.—*Med. Times and Gaz.*, April 2, 1864.

23. *Two Cases of Stone in the Bladder of the Female Treated by Rapid Urethral Dilatation, with Remarks on the Operation.*—Mr. THOMAS BRYANT read a paper under this title to the Royal Medical and Chirurgical Society, April 26th, 1864.

He commenced by giving the history of two cases, of which the following are brief notes: Case 1.—H. C., aged 52, admitted October 13, 1862. She had had symptoms of urinary irritation for eight months, and for three had been quite unable to retain her urine. On November 19 the stone was removed by rapid urethral dilatation, and it measured $1\frac{1}{4}$ inch by 1 inch in diameter. The operation was followed by immediate relief. On the day following the patient could hold her urine for twenty minutes, and in a week for many hours, and in three weeks she left well. Case 2.—Ann C., aged 35, was admitted on February 17, 1864. Urinary symptoms had existed for seven months, and were very severe; the urine was full of pus, mucus, and was intensely fetid. The least examination caused her great pain. After rest in bed for several weeks these symptoms had improved, and on March 5 the operation was performed. Chloroform was given, and the urethra rapidly dilated by Weiss's dilator. The stone was then removed, but little difficulty being experienced in its removal. The calculus measured 2 inches by $1\frac{1}{2}$ inch in diameter, and $5\frac{1}{4}$ inches by $4\frac{1}{2}$ inches in circumference, weighing 2 oz. 2 dr. The next day the patient could hold her urine for fifteen minutes, on the second for forty, on the third for two hours and a half, and on the fifth for five hours. A small slough separated on the sixth day from the urethra, and during an examination the finger was introduced again into the bladder, which caused some little incontinence: but this gradually disappeared, and on April 5 she was able to retain her urine for five hours. She is now convalescent, having good power over her bladder for three or four hours. The author then passed on to the consideration of the dilatability of the female urethra, and quoted many interesting cases, which were tabulated, in which a calculus had been expelled by natural efforts, and in which no incontinence of urine was the result. He then proceeded to consider the operation of urethral dilatation as a means of removing a calculus or foreign body; and gave an analysis of twenty-eight cases, which he had tabulated, in which he proved that incontinence of urine resulted in only four out of the twenty-eight examples, and that in these four the dilatation had been *slowly* performed. He then considered in detail many of the cases, and enlarged upon the best mode of performing the operation. The subject of urethral lithotomy next obtained a notice; and it was proved that an incontinence of urine was a common result of the operation—nine subjects out of twenty being left in such a condition. Removal of a calculus by lithotripsy was then touched on, and the subject of vaginal lithotomy introduced, the author indicating the exceptional cases in which either operation may be required. The following conclusions were then drawn up: 1. That the female urethra may be dilated to a considerable extent with facility, and without danger. 2. That *slow* and tedious dilatation of the urethra, by sponge tents or other means, appears to be injurious. 3. That *rapid* urethral dilatation, with the patient under the influence of chloroform, is the safest and most expeditious method of removing all average-sized calculi and foreign bodies from the female bladder; for calculi one inch in diameter in children, and even two inches in adults, have been safely removed by this practice. 4. That the operation of incising the neck of the bladder and urethra is one of danger.

and should be laid aside. 5. That lithotripsy is a valuable operation in cases in which a stone cannot be safely removed by rapid urethral dilatation—that is, when the stone is very large, and when the bladder is healthy; and that it is the best practice to remove the broken fragments by the forceps as speedily as possible. 6. That vaginal lithotomy is an operation of value when the other modes of operation are inapplicable; but that, as a general practice, it is not required.

Mr. HENRY THOMPSON regarded the paper as a valuable contribution to practical surgery, because it was impossible for any one surgeon to come to logical conclusions respecting the best mode of treating these cases from his own experience alone, stone in the female being, comparatively speaking, a rare affection. Mr. Bryant had contrasted the method of rapidly dilating the urethra by means of Weiss's instrument with that of slowly dilating it by sponge tents. It might be regarded, perhaps, as generally agreed that the latter method was not a desirable one. This left for consideration the treatment by lithotripsy, by incisions, and by rapid dilatation, as well as that in which the two latter were combined. With regard to lithotripsy, although he approved of it for stones of moderate size, he was quite sure that all who had attempted to remove a large stone at one sitting by this means encountered difficulties and risks of no ordinary kind. The bladder soon became empty, and the manipulation and removal of large, sharp, and angular fragments in that condition he considered a very hazardous proceeding, and one which probably involved more damage to the urethra, to say nothing of the bladder, than the removal of a good-sized stone entire. He was not quite sure whether the combination of incision with some dilatation had received all the attention it merited. For large stones he could speak in high terms of its value. This might be illustrated by briefly referring to a case which had occurred in his own practice two months ago. He had been called by Dr. Ashurst, in Kent, to see a lady, aged 77 years, who had suffered very severely from the presence of a large calculus. She was placed under chloroform. Mr. Thompson then dilated the urethra so as to admit the left finger easily; and having thus examined the stone, and found that it was too large to pass by any dilatation he thought proper to employ, he made an incision downwards in the median line, using the index finger as a director, and divided mainly the floor of the urethra and soft parts beneath, after the manner recommended by Mr. Fergusson, incising only very slightly the neck of the bladder. Having done this he extracted, slowly and carefully, a stone $2\frac{1}{4}$ inches long by $1\frac{1}{4}$ inches wide, and weighing nearly $2\frac{1}{2}$ ounces. He then introduced Marion Sims's vaginal speculum, and closed the incision by metallic suture, as when operating for vesico-vaginal fistula. The result was perfect. The patient, notwithstanding her age, was now perfectly well, walking about, and retaining her urine for three hours with ease. For very large calculi he should prefer again to adopt this method to that of trusting solely to the large amount of unaided dilatation which would be required.—*Med. Times & Gaz.*, May 7, 1864.

24. *Fibrous Tumours of the Uterus Treated by Surgical Means.*—Mr. BAKER BROWN, in a paper read before the Obstetrical Society of London (Feb. 4, 1864), reminded the members that on December 7, 1859, he had read a short paper on this subject, containing a case of fibrous tumour of the uterus treated successfully by surgical means. Also on March 6, 1861, he had read a second paper on the same subject, giving six cases, four of which were cured, one was relieved, and one died. The object of the present paper was to confirm the practice previously advocated, by fourteen more cases, and at the same time to show that in most cases a very modified surgical treatment was sufficient; for whereas Mr. Brown had hitherto divided his operation into two parts—viz., first preliminary incision of the os and cervix; and, secondly, gouging or breaking up the tumour; he now finds that the first step will always arrest the hemorrhage and the development of the tumour. In some cases the tumour decreases, and when small it will entirely disappear, more especially if of recent origin; and even when gouging is required a much slighter operation is sufficient. Mr. Brown, therefore, now never uses "Harper's instrument," but only a pair of long handed, blunt-pointed, curved scissors. The author entered minutely into the mode of operating, and laid great stress on carefully and thoroughly plugging the in-

cisions and whole vagina with oiled lint after the operation, as on this point depended the chances of hemorrhage, and exposure to air, and consequent hysteritis, and even peritonitis. Mr. Brown then read fourteen cases occurring in the London Surgical Home, illustrative of his remarks. Of these fourteen, ten were cured of the hemorrhage by the incision of the os and cervix uteri alone, and one was relieved; in two only was it necessary to perform the second operation, both resulting in cure of the tumour; in six cases the tumor had either entirely disappeared or materially decreased after incision alone. Of the three deaths, one had occurred from peritonitis, resulting from exposure to cold and the restlessness of the patient; one from organic disease, independent of the operation; and one from pyæmia. Out of between twenty and thirty cases occurring in his private practice, the author stated that he had had one death, in a patient whose case was complicated with hematocoele, and that in his public practice he had had as many more as were now given, with no more deaths. The following practical conclusions were drawn: 1. That the fact of the curability of these tumours is materially confirmed by these cases. 2. That it is not necessary in many cases to do more than incise the os and cervix, thereby lessening the danger of the operation. 3. That the hemorrhage is almost invariably arrested by the incision of the os and cervix. 4. That the cure of these fibrous or fibroid tumours by surgical means, without the danger of enucleation, is now firmly established, as proved by Dr. M'Clintock, Dr. Routh, Dr. Dawson, of Newcastle-upon-Tyne, as well as by himself (Mr. Brown).

Mr. Brown stated that care was taken to prevent the incisions in the os and cervix from uniting. The oiled lint in the first instance, and the injections afterwards, generally prevented union; but if any bands of lymph were thrown out, he always broke them down with the finger. He had never seen a case in which the patient had been confined after the operation, but it was only reasonable to infer that parturition would be accelerated after these incisions; for in the case of a primiparous woman, where the os is torn, the subsequent labours are always exceedingly quick. As to the *rationale* of the operation, Mr. Brown had avoided the question, for fear of giving too wide a field for discussion. He thought the action was twofold. The tumours were of very low vitality, and the slightest interference with them stopped their growth. Thus, in the first place, the initiatory bloodvessels were cut through by incising the os and cervix; and, secondly, the tumour was grasped more firmly by the contraction of the uterus, which always takes place after the os is incised; and thus the tumour was confined, could not grow, and often died. He was obliged to Dr. Routh for alluding to the authenticity of his (Mr. Brown's) cases, as some doubt had on more than one occasion been thrown on the subject. He could only repeat that his practice at the London Surgical Home was open to every member of the profession. He had only given cases where severe hemorrhage was present as the most urgent symptom, and in almost all the cases which came to him, the patients had been previously treated without success.—*Med. Times and Gaz.*, March 19, 1864.

— 25. *Traumatic Tetanus treated by Nicotine*.—Dr. W. OGLE relates (*Med. Times and Gaz.*, March 12, 1864) a case of traumatic tetanus in which he administered nicotine, but without averting a fatal termination.

— 26. *Utility of Aloes in the Treatment of Wounds—Formula of an Aloetic Tincture for external use*.—Aloes is one of the oldest medicines; it enters into a great number of formulas, some of which have been famous for a long time (Elixir de longue vie, Paracelsus Elixir), and others, some of which still continue to have a certain amount of credit (Garus's elixir, antecibum pills, &c.). Their number can be conceived on looking over the long list Jourdan gives of them in his *Universal Pharmacopœia*, where, however, the whole of the aloetic formulas are not given. It is, therefore, one of those medicines whose properties are known and appreciated, and about which it would seem there is little to be said. It is scarcely used now-a-days but internally, while it was previously used as much externally as internally. It is not, therefore, useless to recall to

the memory of practitioners the uses of this medicine in external therapeutics which have been too much forgotten.

Galen believed aloes applied externally to be an astringent, and stated its properties for closing ulcers. After the Greeks, the Arabs, and a good many therapeuticiens who came after them till the eighteenth century. Geoffrey pointed out aloes as eminently useful in the dressing of wounds and ulcers, and as being susceptible of favouring and quickening their cicatrization, and even of stopping the hemorrhage occasioned by these solutions of continuity. Surgeons in old times used it frequently, either in an alcoholic solution for washing bad ulcers, or as a topic, and mixed with balsamic substances, such as myrrh and incense, in ointments, in balsams, which were used not only in old wounds, but even in recent ones. It entered into the composition of numerous vulneraries, and was thought to prevent suppuration as well as the formation of ulcers, and to promote the adhesion of the edges of wounds made by cutting instruments. In these cases the balsam of the Commandeur de Permes, in the composition of which aloes enters, had a great renown. The cut edges were brought together, and over the wound a compress steeped in this compound balsamical tincture was applied. Aloes was also used in the composition of collyria for injuries connected with chronic ophthalmia, as well as in injections intended to modify fistulous openings and to promote their obturation.

All these facts seem to be nearly forgotten now. Scarcely a few authors on *materia medica* mention them, and, if I am not mistaken, there are very few practitioners who now think of the external use of aloes and of the advantages it may present. It is left to veterinary surgery, which had the good sense not to give it up, and which continues to use it with the greatest advantage as vulnerary in the treatment of recent wounds, as well as for modifying and cicatrizing in the dressing of atonic, sanious, fetid, and resisting ulcers.

It is much less, I confess, after reading the old authors than after having been struck with the rapidity with which the aloetic topics cicatrize wounds in animals, that I thought of experimenting on man, I was not long in discovering that with him they were equally useful. The direction of my studies and the nature of my occupations bring within my reach only a few cases of surgery. I have, however, for a few years got a sufficient number of cases to verify the remarkable cicatrizing properties of aloes. In using the compound medicines in the composition of which it enters, I could not have perfectly appreciated its action. These preparations, more or less complicated, contain balsamical substances, such as myrrh, incense, benzoin, balsams of Tolu or of Peru, which also possess very topic properties that necessarily to a certain extent assist the aloes. I preferred, therefore, using aloes alone, and found it so effective that in the majority of cases it was not necessary for me to add an adjuvant.

The preparation which I chose for external use is a saturated tincture of aloes. The aloetical tinctures were, however, the most valued preparations of the old surgeons. I had, therefore, to support my first trials by the authority of the past; but the formula of these tinctures was very variable, and most of them added at least one other element, balsamical or gommo-resinous. My general formula only contains two elements, alcohol at an ordinary degree of concentration, and aloes.

I first of all used one part of aloes to four of alcohol; but I was not long finding out that the more aloes the tincture contained, the more efficaciously it acted on the wounds. I had then to find out in what proportion the alcohol could be saturated with aloes, and I have obtained, with one part of aloes and two of alcohol, a complete solution. On making the dose one part and a half, a deposit is formed which renders useless part of the aloes.

My formula is therefore the following: Aloes, 1 part; alcohol, 2 parts. The aloes must be chosen of good quality; Socotrine aloes is the best for external use as well as for internal; hepatic aloes is still valued in veterinary practice really more for its cheapness than for its special properties. As to the impure aloes called caballin, it must be altogether rejected.

In order to apply the alcoholic tincture of aloes, dip into it a pencil made of lint, and then pass it over the surface of the wounds; or saturate with it the

lint used for dressing the wounds. It is evident that this last mode of treatment is more active than the first; therefore it is the one which must be used in the treatment of atonic wounds which show little or no tendency to cicatrize. The application of the tincture of aloes on the wounds is but slightly painful, and even often, as to the sensation, there is no local effect.

In the cases in which this treatment has succeeded with me, I will mention particularly bed-sores occurring in patients suffering from typhoid diseases or cachectic, and generally so difficult to heal. I get them exclusively dressed with the tincture of aloes, or I have them painted on their surface or around them with this tincture, I then cover them with styrax ointment spread on lint. Bed-sores very seldom resist either one or the other of these treatments. I have also obtained remarkable success in the treatment of old, atonic, and inveterated ulcers; amongst others I will mention two cases of varicose ulcers of the legs of several years' standing, and which had not been modified by several other applications: having been dressed with perseverance for about two months with lint saturated with tincture of aloes, these ulcers have ended by cicatrizing in an effective manner.

I believe that this topic would be of great advantage in the treatment of the ulcers which follow burns, and which often turn out so badly. In a thousand ways, I may say, surgical therapeutics would rejoice in the use of aloetic topics, and they would deserve to be rescued from their disuse. The formula of tincture which I have just now recommended would be, I think, the best that could be used: a balsamic ingredient such as benzoin or incense could be added in case of its insufficiency.

It will not be without interest to add that we can daily profit by the cicatrizing properties of aloes in the treatment of our domestic animals, in the horse, whose services the doctor so often requires. We all know how much this animal is exposed to sores resulting from blows or knocks which he gets in his stable, or from the rubbing of his collar, his saddle, or other parts of his harness. Now, dressings of the saturated tincture of aloes dry up and heal with great rapidity the scratches and sores of horses, and prevent them becoming ulcerated. This lesson in veterinary surgery should not be despised by city practitioners, and less still by those of the country, who take interest in the useful and courageous animal companion of their peregrinations.—*Dublin Med. Press*, March 16, 1864, from *Bull. de Thérap.*

27. External Use of the Biniodide of Mercury in Chronic Glandular and other Tumours.—Dr. M. T. SADLER calls attention (*Med. T. & Gaz.*, April 23, 1864) to this remedy, and says that he has used it for the last eighteen months, in a great number of cases with the greatest benefit. He says he has almost invariably used it without the exhibition of any other medicine, so that whatever benefit was produced must have been due to it alone. He generally ordered it as an ointment containing sixty grains in an ounce of simple ointment; but believes that half that strength is better for persons with delicate skins, as it sometimes causes a sensation of burning pain when used too freely. It should not be allowed to blister the skin, and when redness is produced it seems best to omit the rubbing for a night or two. It seems most useful in strumous swellings of the glands, but it is also of use in gouty swellings. The only ill effect that he has seen is the burning pain sometimes caused, and that inconvenience may apparently be avoided by using a weaker ointment.

28. Regeneration of Bone.—M. OLLIER in a recent communication to the Surgical Society of Paris, states that the regeneration of bone is now firmly established by his experiments. It occurs, he says, most readily and rapidly in the long bones. The preservation of the periosteum is essential. In the case of the long bones, the extremities remain a long time in a state of cartilage before they consolidate into bone. The flat bones may be reproduced from their external periosteum. M. Ollier has in this way produced a solid bony covering for the nose out of flaps of periosteum taken from the frontal bone. The internal periosteum of the cranial—the dura mater—will also produce ossification. The mucous periosteum of the nasal fossæ, of the palatine arch,

also produces bony matter; but the production takes place slowly, requiring five, six, seven, and even eight months for its completion. The short bones may likewise be reproduced. M. Ollier has reproduced the calcaneum, the cuboid bone, etc., in animals. The new bone, he says, in these cases sometimes attains a size even larger than that of the original bone. Certain conditions are necessary for the success of the regeneration; and of these, especially, he refers to the thickness of the periosteum, and its firmness.

29. *Absorption of Dead Bone.*—Dr. W. S. SAVORY read a paper (Feb. 23, 1864) before the Royal Medical and Chirurgical Society. The question he stated, whether dead bone can be absorbed, still awaits a satisfactory answer. For while careful and accurate experiments have furnished only negative results, there are unquestionable facts which compel us to admit the possibility of the occurrence. One all important consideration seems to have been hitherto neglected in the inquiry—the influence of pressure in determining the result. Thus, in the experiments which have been performed on the subject, and which have naturally led to the conclusion that dead bone may be kept amidst living tissues for weeks or months without losing the merest fraction of its weight—in these experiments the dead bone was kept in simple contact only with the living parts. It appears that no considerable pressure was maintained. Whereas when ivory pegs are driven into bone, extreme pressure is of course produced. In order to test this view, some experiments were performed, which are related in the paper. It appeared to the author that the only explanation which can be offered of the results of these several experiments is, that the absorption of dead bone, when in contact with living bone, is determined by the pressure to which it is subjected.

Mr. HILTON said the profession ought to feel obliged to Mr. Savory for having adduced by well-considered and well-arranged experiments such conclusive evidence of the absorption of dead bone by the surrounding tissues—a fact not usually admitted by surgeons. He (Mr. Hilton) had several times noticed, on looking at two ivory pegs which had been employed in the same case of ununited fracture, and apparently under the same conditions, that the surface of one of them was partially absorbed, whilst the other did not manifest any loss of substance—a difference hitherto inexplicable, but now elucidated by the author's paper, as depending upon the variable pressure to which they had been subjected. An interesting point, however, presented itself for consideration to which the author had not made any reference—viz., What was the amount and duration of pressure required to induce this absorption? for dead bone was often seen buried within granulations which were undoubtedly capable of exerting much pressure without the slightest appearance of any absorption having occurred. For instance, in the case of an amputation through the femur, the same end of the bone may come away necrotic after several months' subjection to the pressure of muscles, fascia, granulations, bandaging, and strapping, yet the track of the teeth of the saw used at the amputation would be seen as cleanly cut and as sharply defined as on the day of the original operation. The same kind of facts was quite as discernible in cases of compound fracture of a long bone, where the fractured end of bone, although surrounded deeply by granulations and new bone during several months, would present the sharp, well-defined edge of the fracture as evidently as on the day of the accident, uninfluenced by the pressure of any of the surrounding living tissues. Mr. Hilton had removed from the leg several portions of a comminuted compound fracture of the tibia eight years after the accident and seven years after the closure of the external wound, and upon two of them the well-defined edge of the original fracture was obvious and markedly different from the serrated edge observable where the piece of bone had been separated from the living bone by the slow process of absorption. Mr. Hilton would suggest to the author the inquiry as to how or by what combination of minute events does pressure contribute towards the absorption of the dead bone, because the pressure in his (Mr. Savory's) experiments was made equally on both the living and dead bone. No doubt such an investigation could not be placed in better hands than Mr. Savory's.

Mr. SAVORY said he had considered it best in the paper simply to demonstrate

the fact that the absorption of dead bone is determined by the pressure to which it is subjected. In working at the matter, of course he had thought of the nature of the influence thus exercised, but he did not consider any opinion which he might have formed on the subject worth expressing. The question was not in relation to the absorption of bone, whether living or dead, but to the effect of pressure on the absorption of dead bone. With respect to the case Mr. Solly mentioned, it was not enough to show that dead portions of bone bore evidence of having been partially absorbed: it must be shown that such absorption occurred after the death of the bone, and thus independently of all pressure. Mr. Savory defended the use of the word "absorption." He had not employed the term without foreseeing the objection that might be urged against it; and so he had been careful to relate how, in some of the experiments, the wounds at once closed, and completely healed without any discharge or other means by which disintegrated fragments of bone might have escaped. Moreover, if the preparations were examined it would be seen that, in some of them, the portions of dead bone which had been removed could not have escaped, for the holes were tightly plugged by the pegs which had been driven in. With reference to the destination of the bone which disappears in disease, Mr. Savory thought that the evidence advanced to prove that this is always disintegrated and cast out, was unsatisfactory and inconclusive. Of course, in some forms of ulceration of bone, as in phagedenic ulcers of soft parts, disintegrating fragments might perish and escape; but in other less destructive forms of ulceration bone might disappear through absorption. Much had been made of the fact that the discharge from carious bone contains an unusual abundance of phosphate of lime, this being supposed to represent the dissolved osseous tissue. But while, on the one hand, this would prove too much, the proportion of bone which disappears not being equal to the quantity of phosphate of lime discharged, on the other hand, a better, a more philosophical explanation of the fact might be given. As in health each part assimilates to itself from the blood its own proper constituents, so in abnormal forms of nutrition it was reasonable to believe that the material furnished by different structures would present characters of composition more or less corresponding with those of the tissue whence it proceeded. Be this as it might, however, in some at least of the experiments described there was no means by which the portion of bone which had disappeared could have escaped externally.—*Med. Times and Gaz.*, March 5, 1864.

30. *Epidemic of Hospital Gangrene, at St. George's Hospital.*—Mr. T. P. Pick gives (*British Med. Journ.*, March 5, 1864) an account of a recent epidemic of phagedena at the above named hospital.

He states that in no case was any constitutional fever observed, which might lead one to suspect the advent of phagedena, before the local symptoms manifested themselves. The only premonitory sign which he observed was, in some cases, a total cessation of pain twenty-four hours prior to the attack; but this was by no means constant, and could not in any way be relied upon.

"The constitutional symptoms, when they did appear, which was for the most part about the second or third day, were inflammatory in the first place, but quickly subsided into irritative fever, especially characterized by an extremely rapid and weak pulse.

"The local symptoms presented themselves in two perfectly distinct forms, which, for the sake of clearness and distinction, may be designated the gangrenous and the ulcerative.

"When a wound, which has been previously healthy, is about to take on the gangrenous form, it becomes dry, and, losing its florid colour, becomes of an ashy gray; the surrounding parts are swollen, tumid and tense, of a bright red hue, and present a glossy and shining appearance; the colour soon becomes darker, and eventually black; the ulcer now spreads rapidly, and has a tendency to assume a circular form; the edges become hard, everted, and rugged, and the surface covered with a thick, dark gray or blackish spongy slough, which can only be compared, in appearance, to a yeast poultice. There is great tendency to œdema of surrounding parts, and in some instances, to inflammation of the absorbents, and even the veins. The pain is often extremely severe, of a sharp,

stabbing character, but sometimes it is comparatively slight. The disease may extend, principally, however, confining itself to the skin and cellular tissue, until large surfaces of bone and muscle are exposed; it rarely, however, attacks these structures; vessels may be ulcerated into, and alarming hemorrhage take place. After a time, however, its progress is arrested; upon visiting our patient, we notice a little row of tiny bead-like projections around the margin of the sore, or it may be in one part only; wherever these little granulations, for such I take them to be, are found, we may rest assured that the disease is stopped. Soon, now, the sloughs are thrown off in the form of reddish-brown, or grayish viscid masses, leaving a very sensitive surface, covered with pale, flabby granulations, and it is astonishing with what rapidity these ulcers heal, when there is no bone implicated; they have, however, a tendency to a recurrence of the disease."

The following were the various modes of treatment adopted:—

"*Local Remedies.*—Of these remedies, the one which usually ranks first, and is most highly extolled, is *nitric acid*. We are told that 'the extension of the sore must be stopped by the free application of fuming nitric acid.' If this application did stop the disease, we should be justified in using it; but, unfortunately, it appeared to be perfectly inert to effect this end. In spite of a thorough destruction of the sides and edges of the sore with the strongest acid, the disease still progressed. In one case in which it was used, the edges were destroyed twice, and still the disease continued; and, as it causes excruciating pain, it does not seem to me advisable to use it.

"*Carbolic Acid*, as a remedial agent, has been brought before the profession during the last two years; and two eminent French physiologists, MM. Gratiolet and Lemaire, have made the important observation that, whilst it does not interfere with chemical fermentation, it completely arrests all vegetable and animal fermentations which arise from cryptogamic life. This remedy has been much extolled in checking sloughing and altering the character of ill-conditioned ulcers; and, though it does not appear to have any power of arresting phagedæna, it is an extremely useful application in these cases in destroying the offensive smell of the secretion, and in accelerating the separation of the slough. In several cases, this remedy was applied locally, all general treatment being avoided; and in no one instance was there sufficient evidence to justify one in assuming that it arrested the disease.

"The transfusion of a stream of *chlorine gas* through the ward was tried in one or two instances, though not sufficiently often to establish any definite result. On August 6th, there were three cases of phagedæna in the Fitzwilliam Ward of this hospital. They were of different duration, and were all spreading, though in one there was some slight tendency to arrest. A gentle stream of chlorine gas was passed through the ward for eighteen hours, at the end of which time the phagedæna was arrested in all three cases. A man, having undergone amputation, was placed in a separate apartment. Two days after, he was attacked with phagedæna, which rapidly extended. A stream of chlorine was passed through the ward, and in forty-eight hours the disease was arrested. Though these facts are satisfactory, they are not conclusive, and are far too meagre to arrive at any just conclusions. Whether this remedy has any control over the disease, or not, there is no doubt that it must act beneficially, if in no other way, at least in destroying the disgusting effluvia, which it does in a pre-eminent degree, and is thus especially useful, particularly in hospitals, where so many sick are collected together in one room.

"*General Remedies.*—There is no doubt that *opium* is our sheet-anchor. After watching the wonderful effects of this drug, not in one or two cases, but in dozens, and after every other conceivable remedy had been tried and failed, I am confident that, if there is such a thing as a specific, opium is a specific for phagedæna, if properly administered, and in sufficient quantities. I have never seen it fail. The most obstinate case was that of William W., whose history is given above. He took landanum in gradually increasing quantities for fifteen days, till at last he was taking nearly half an ounce in the twenty-four hours. This, however, subdued the disease. But this must not be regarded as a typical case. Instances have been seen in which a rapidly spreading sore has presented

a perfectly clean and healthy surface under twenty-four hours' treatment by opium; and two or three days may be generally considered as ample time to stop the most rapidly spreading sore.

"*Chlorate of Potass.*—This remedy, from its known properties in checking unhealthy and gangrenous ulcerations, was largely tried in phagedæna, and with some amount of success; for, though it did not appear to arrest the disease, at all events not with the same certainty as opium, still it appeared to act beneficially in the cleaning of sores and the separation of sloughs; and, from a knowledge of its properties, it was supposed that it might act as a prophylactic and prevent a recurrence of the disease, and was accordingly prescribed largely.

"*Ammonia* possesses no power over the disease, but was often a necessary addition, on account of the very rapid prostration and the great deficiency of nervous power which is often observable in these cases.

"Dr. Polli of Milan has lately introduced a class of medicines before the profession, as having the power of arresting putrefactive fermentation; viz., *sulphurous acid*, in combination with potass, soda, and lime. These remedies were tried in phagedæna; and the drug did not appear to exert any influence. It was given in several cases, and in no one instance was the slightest benefit obtained.

"The treatment, then, that has been adopted during the late outbreak, has been in the main opium, sometimes combined with ammonia or chlorate of potass, at other times alone; and a liberal diet. And, whatever may be the result of treatment in other epidemics, there is no doubt that, in the one under consideration, this plan was followed by the best results; in fact it was the only one which really subdued the disease. Of forty-seven cases of which accurate records are kept, the average time which the opium took to subdue the disease was forty-eight hours, the shortest being twenty-four hours."

31. *Syphilitic Lesions of Internal Viscera.*—The affections of internal organs arising from syphilis have, during the last few years, been receiving considerable attention from pathologists in this country and on the continent. M. Lancereaux, *chef de clinique* in the Paris Faculty of Medicine, has lately published the results of some researches on the subject in which he has been engaged since 1858.

The lesions, he says, produced in the viscera by syphilis present in general sufficiently well defined characters to allow of their cause being specified. They may be grouped under the following forms: 1. Interstitial inflammation. 2. Gummata or Tumours. 3. Cicatrices.

Those organs, such as the liver and testis, which abound in parenchyma, are most liable to the first named of these forms. New elements (nuclei, cells, and fibres of connective tissue) are developed in the meshes of the organ, producing enlargement, and ultimately contraction and atrophy. When this takes place the surface of the above-named glands presents furrows and depressions of greater or less depth, giving a characteristic appearance to the organ. In the liver we find lobular cirrhosis, *i. e.*, *cirrhose à gros grains*, as M. Lancereaux calls it—a state very different from the granular induration of drunkards, or *cirrhose à petits grains*. The inflammatory form is less distinct in the other viscera, as the brain, kidneys, lungs, and heart; and is also more difficult of recognition—that is, when one organ alone is apparently affected. In these organs it manifests the characters of cerebral induration or softening, of interstitial nephritis, or of chronic pneumonia or carditis.

The second form of visceral syphilis is characterized by the presence of tumours varying in size from a pea to a haricot bean, and generally termed *gummata* or gummatous tumours. They may be firm or soft in consistence, and of a gray, whitish, or yellowish colour, according to their age and to the relative proportions of their histological elements. They are ordinarily surrounded by a dense grayish vascular fibrous tissue, very resistant to the finger; this forms a kind of cyst from which they may sometimes be enucleated, and its presence is often a sufficient guide in distinguishing these tumours from tubercle, cancer, and most other non-syphilitic new formations. Gummata in their early stage are constituted of the embryonic elements of connective tissue. Having arrived

at a more or less complete degree of development, they undergo a retrograde or fatty change. They may be spontaneously absorbed. This termination is doubtless favourable; but traces of the presence of the tumours may be left in the form of cystoid membranes (in the brain), fibrous brands, or cicatrices (in the liver). In some cases the tumours undergo calcareous transformation.

Syphilitic gummata are readily distinguished from cancer, and from fibrous or fibro-plastic tumours, by the small amount or absence of vascularity, and by their situation; but they are very easily confounded with tuberculous or serofulvous deposits, vascular atheromata, and deposits arising from glanders or farcy. Their nature, however, may be determined by a consideration of the characters already described, and by a careful examination of all the organs and of the liver in particular.

The formation of cicatrices is in reality only one of the modes of termination of the preceding forms of syphilitic lesion. It is characterized by the presence, on the surface of organs, of one or more furrows; of more or less deep depressions; and by fibrous bands in the interior. Of these lesions, the first—furrows and depressions—are distinguished from the atrophy consecutive on obliteration of the vessels, by the presence of a fibrous cyst at the depressed part, and by their having no relation, as regards situation, to the distribution of the vessels. From cicatrices left after wounds, they are distinguished by the absence of the colouring matter of the blood. The fibrous bands in the interior of organs are distinguished from absorbed and cicatrized purulent deposits by their numbers, as well as by the absence of purulent *detritus* in the neighbourhood.

In the vascular glands hypertrophy sometimes occurs, with or without alteration of the elements of the organ. In 24 cases, M. Lancereaux found hypertrophy of the spleen in 10 cases; of the mesenteric glands in 10; of the thyroid body in 4; and of the suprarenal capsules in 2. In some cases he has found hypertrophy of the follicles at the base of the tongue and of the pharynx and tonsils. This lesion of the glands is generally accompanied by modifications in the blood and by cachexia.

Fatty, amyloid, lardaceous, or waxy degeneration of organs, especially of the liver or kidneys, were found in several cases; but M. Lancereaux is not disposed to regard them, like the lesions already described, as the direct results of the syphilitic infection. From his examination of individual organs, M. Lancereaux has arrived at the following results: In the liver he found interstitial hepatitis or cirrhosis in 3 cases; gummata without cicatrices in 1; cicatrices without tumours in 7; cicatrices of the surface of the liver with gummata in the substance of the organs in 9. In most of the cases the liver had also become adherent to the diaphragm or to the neighbouring viscera; but per hepatitis was never found independently of the other appearances described.

In the kidneys, among 24 cases there was interstitial nephritis in 3 instances; interstitial nephritis with waxy degeneration in 2; small tumours disseminated through the renal parenchyma in 1; cicatrices on the surface with atrophy in 2.

The testes were affected in three cases. In one there were gummatoous masses in both testicles, producing enlargement; the proper glandular tissue had entirely disappeared. In another there were guumatous deposits in one testicle and interstitial orchitis in the other; and in the third there was periorchitis. In some other cases atrophy of the testicles appeared to be the result of syphilis. Similar changes were also found by M. Lancereaux in the ovaries.

In the brain old gummatoous tumours, having partly undergone fatty transformation, were found in two cases. In one case a cyst-like membrane, with numerous partitions, occupied the greater part of the right anterior lobe. Cicatrices on the surface of one of the convolutions, and a cicatricial fibrous band between the gray and white substances, were present in one case. In one instance there was amyloid degeneration of the pia mater and softening of the pons Varolii.

The lungs presented, in two cases, chronic pneumonia, and deep cavities with smooth regular walls; gummatoous deposits in 3 cases; and superficial cicatrices in 1. There were narrowing and dilatation of the bronchi in 2 instances; cicatrices

and ulcerations of the pharynx (qu. larynx ?) in several; and ulceration of the bronchi in 1 case.

The heart presented, in 2 cases, gummatus tumours disseminated among a fibrous tissue, together with alteration or disappearance of most of the muscular structure of the organ. In 1 case there was simple myocarditis; and in 2 lardaceous degeneration. In several instances rapid or sudden death has arisen from the cardiac lesion.

The functional disturbances produced by syphilitic lesions of internal organs have no specific character. Each organ manifests its lesion by disturbance of its proper functions; and hence the symptoms proper to these affections vary not only with the organ affected, but with the seat and extent of the morbid change. The elements of diagnosis must, therefore, be sought for in the presence or previous existence of the internal manifestations of syphilis, and in the antecedents of the patient. It is well, in any case, to take into consideration age and other etiological circumstances; to examine most carefully the liver, which is most frequently affected; and to note the state of the kidneys, the presence of syphilitic disease in which often produces albumen in the urine. The simultaneous disease of several viscera is worthy of attentive consideration; but the special foundation for diagnosis is, together with the period (tertiary) at which the symptoms appear, and the peculiar progress of the numerous manifestations of visceral syphilis by special cachexia by which these are almost always accompanied.

In general, the prognosis of syphilitic disease of the viscera is to be regarded as serious in proportion to the importance of the organ or organs affected.

Specific treatment, consisting of mercury and iodide of potassium, has often been found by M. Lancereaux, when used in proper circumstances, to rapidly remove serious symptoms, even when threatening a rapidly fatal termination. This treatment is useful in syphilitic inflammations and tumours, but has no effect on cicatrices. It must not be forgotten that the prolonged use of these remedial agents is demanded. In this way we may best obviate the tendency to a recurrence of the disease.—*Brit. Med. Jour.*, April 23, 1864, from *Gaz. des Hôpitaux*, 17 March, 1864.

32. *Oesophagism*.—As an example of the curious nervous condition termed oesophagism, Dr. NÉLATON called the attention of his class to a man of vigorous temperament, 35 years of age and in good health, who came to the hospital under the idea that he had a foreign body in the oesophagus. A fortnight since, while picking his teeth with a thin piece of wood, he was suddenly spoken to. His attention was turned away for an instant, and at the moment he was about to make a reply he perceived a perfect sensation of a foreign body on the left side of the pharynx. A practitioner who was at once called in recognized the foreign body at the spot indicated, and made some vain attempts to extract it. Extremely little pain followed, but as this afterwards increased, he came to the hospital. M. Nélaton suspected from the narrative, as it turned out to be the fact, that no foreign body existed; and cautioned his hearers that they should be very circumspect in making these examinations, as it not unfrequently happens that an unpractised finger mistakes the upper edge of the cornu of the os hyoides for the body supposed to have been swallowed. Usually these nervous symptoms disappear at the end of three months under suitable general treatment; but M. Nélaton referred to a case in which they have manifested much greater tenacity. A lady, about six months since, being about to drink some water sweetened with syrup, not liking the appearance of the latter, placed a single drop on the tip of her tongue, and discovered it to be a solution of potass. Immediately, and notwithstanding that the drop had never been swallowed, she perceived a pain at the lateral part of the pharynx, which was accompanied by an absolute impossibility of swallowing. The pain has diminished, but so difficult does deglutition continue to be, that the patient requires an hour to swallow a simple cup of broth, while the passage of the smallest solid body is still absolutely impossible. It was believed that she was the subject of stricture of the oesophagus, until M. Nélaton, being consulted, passed down the largest bougies with great facility.—*B. & F. Med.-Chir. Rev.*, April, 1864, from *Union Méd.*, No. 28.

33. *Enormous Distension of the Bladder.*—Dr. SCHNEIDER regards the following case as unique in the amount of urine contained in the distended bladder. The patient, aged 63, was brought into the hospital at Bern 11th May, with symptoms of general dropsy, from which he had suffered for some time. Although the examination of the condition of the abdomen was difficult on account of the oedematous state of its parietes, and the patient was stated to have passed urine since his admission, yet the shape of the tumefaction present seemed to indicate its being produced by a distended bladder. The catheter was, therefore, introduced, and a large stream of urine flowed out in astonishing quantity, no less than 21 Swiss *schoppen* (8 litres, or 14 English pints) being withdrawn. After twelve hours, 9 other *schoppen* were removed, and in the evening 4 more, making altogether 34 *schoppen*, or more than 22 English pints in the twenty-four hours. On subsequent days, lesser quantities were withdrawn, and the man died on the 25th. At the autopsy, there were found two large lateral diverticula in the bladder, directed backwards, and giving the organ much the appearance of a bishop's mitre. No mechanical hindrance whatever to the exit of the urine, in the shape of stricture or enlarged prostate, existed. The coats of the bladder were rather thin, and the ureters moderately dilated; the kidneys were somewhat larger, and their pelvis more dilated than normal. There was dropical effusion into the chest and brain. Dr. Schneider attributes the retention in this case to weakened muscular power occurring in an old and phlegmatic subject.—*B. & F. Med.-Chir. Rev.*, April, 1864, from *Schweizerische Zeits.*, vol. ii, p. 453.

34. *Causes of Death after the Operation of Lithotomy.*—Mr. HOLMES COOTE makes (*Lancet*, Jan. 16, 1864) some interesting remarks on this subject. He observes that "A very remarkable statement, bearing on the question of mortality, has been made by a gentleman named Wise."¹ He asserts that the irritation of the wound by the urine flowing over it is the cause of death in two-thirds of the fatal cases. And he suggests as a means of avoiding such dangers—first, the evacuation of the urine before the operation, and its substitution by mucilage; secondly, the drainage of the bladder by a gutta-percha syphon fastened in the wound; the syphon to contain a cotton wick, which is to remove the urine from the bladder by capillary attraction. The source of danger is, I believe, mostly hypothetical, and the means taken to remove it would, in all probability, prove irritating and in every way injurious. These cases do best, *ceteris paribus*, in which the escape of urine from the wound is free after the operation. The surgeon is not wholly devoid of anxiety when the urine escapes entirely by the urethra immediately after the operation. He knows that swelling has taken place, and has brought the edges of the wound in contact. Under these circumstances the infiltration of urine into the areolar tissues is a possibility.

"The writers of the preceding age seem to have entertained a just appreciation of the dangers proceeding from hemorrhage after the operation of lithotomy. 'I cannot say,' remarks Mr. Samuel Cooper, 'that it has ever fallen to my lot to see any cases (out of the great number which I have seen) in which death could be imputed to hemorrhage. Notwithstanding, the bleeding has often been so profuse, and from so deep a source, just after the operation, as to create suspicion that it proceeded from the internal pudendal artery. Such hemorrhage generally stopped before the patient was got to bed."² Hemorrhage may be immediate, or may supervene from eight to twelve days after the operation. In the first instance it follows the wound of some considerable artery; in the second it is usually consequent on the separation of a small slough involving the walls of some vessel. I have known death to ensue from hemorrhage, but the occurrence is very rare. * * *

"I saw very many years ago a second case, in which death ensued from hemorrhage the day following the operation. The pudic artery was untouched. The

¹ *Edinburgh Medical Journal*, March, 1859.

² *Surgical Dictionary*, p. 847.

source of the bleeding was doubtful. There are several anatomical peculiarities which favour the occurrence of this accident: one of the most dangerous is that in which a large pudic artery runs from the interior of the pelvis under the pubic arch, and by the side of the prostate.

"It is a fallacy to say, 'the heavier the stone the greater the danger.' But we are justified in affirming that the larger the stone the greater is the amount of stretching of the parts at the neck of the bladder, and the more considerable the risk of subsequent inflammatory mischief. Mr. Lawrence lately removed from the bladder of a *female*, without making any incision, a stone weighing one ounce and five-eighths. The patient recovered without a bad symptom. The danger attending the extraction of such a stone in the male would have proceeded from the mechanical effects of its extraction, not from its size.

"Most authors agree that renal disease is at all ages most commonly the remote cause of death, and associated with it we may include peritonitis. Pelvic cellulitis from escape of urine is an accident of not very common occurrence, and is due to accident as much as want of skill. Shock from causes unexpectedly prolonging the operation may likewise be a cause of death. Perhaps the most common cause of death is the shock of the operation to a person suffering from organic disease of the kidneys. The first patient whom Mr. Erichsen cut in University College Hospital died from this cause. The 'kidneys were found extensively disorganized, though the urine had contained but a moderate amount of albumen.' A similar case occurred lately in the practice of one of my colleagues.

"In some parts of India—namely, in the northwestern provinces, where disease of the kidney is rare—the operation for the removal of the stone is seldom followed by a fatal result. A professional friend in the public service told me that he had operated nearly three hundred times, and that he had lost under a dozen patients. Another medical officer confirmed the statement, but added that the death-rate became higher when these people were removed to the lower part of Bengal.

"In November, 1863, Mr. Henry Thompson related the particulars of a case in which the lateral operation of lithotomy was performed on a delicate child whose pelvis had undergone great alteration in shape from rickets. The stone could be felt upon pressure through the abdominal parietes, lying in the bladder; but the pelvic outlet was much reduced in size. Death ensued from the shock of a prolonged operation. The question was raised, whether the high operation would not have been preferable; also, whether it would not have been well to have crushed the stone with a lithotrite, introduced by the wound in the perineum, as soon as its size in relation to the pelvic outlet had been ascertained. But in every way the case is important as showing another source of danger, to which sufficient attention has not hitherto been directed."

OPHTHALMOLOGY.

35. *Sympathetic Ophthalmia successfully Treated by Iridectomy.*—M. TAVIGNON has been led to resort to iridectomy for the cure of sympathetic ophthalmia, and he claims (*Revue de Thérapeutique*, March 15, 1864) to have successfully treated one case by this operation. The subject of it was a girl, 11 years of age, who had lost her right eye in consequence of puncture with scissors, and in whom sympathetic iritis became developed in the left eye five weeks after the accident. M. T. excised about a third of the iris at the external portion from the pupil to the external circumference of the iris. The cure, he states, was as complete as possible.

36. *Atropized and Calabarized Gelatine.*—Messrs. Savory and Moore, of London, have prepared this article according to the direction of Mr. Ernest

¹ Science and Art of Surgery, p. 891.

Hart. The gelatine is rolled to exceeding thinness, and is cut into minute discs, which contain a definite proportion of atropine and of the extract of the Calabar bean. The preparations are extremely clean, portable, and exact. They have, it is stated, many advantages for all the cases in which such local applications can be used. For ophthalmoscopic examinations especially this atropized gelatine is highly useful. The little discs of soft gelatine cause absolutely no irritation, if applied according to the directions, which are the same as for Mr. Streatfeild's original atropine papers. The gelatine has the advantage of slowly softening and dissolving. The atropine, or other medicament, gradually dissolves out, and is thus placed under the most favourable circumstances for absorption. Hence much smaller doses suffice to produce a marked effect, by this form of application, than when drops are introduced, which are rapidly carried off in a flow of tears which their introduction for the moment excites. For the purposes of ophthalmoscopy, in iritis, after wound of the pupil, in photophobia, ulcers of the cornea, &c., those discs are said to be very valuable. They are clean, portable, elegant, and effective.—*Lancet*, April 16, 1864.

[We have employed both these preparations, and can confirm, from our own observation, all that is said in their favour.—EDITOR.]

37. Calabar Bean in Ocular Therapeutics.—Dr. E. MARTIN, of Marseilles, records (*Revue de Thérap. Médo-Chirurg.*, April 1, 1864) two cases, one of paralysis of the iris and the other a hernia of iris through a wound of the cornea, both successfully treated by the application of the Calabar bean.

38. Puncture of the Cornea for the Relief of Tension.—Mr. T. PRINCIX TEALE, Jr., records (*British Medical Journal*, April 9, 1864) the two following cases in which tension of the eye caused by temporary disturbance produced by an operation, was effectually relieved by simple puncture of the cornea and iris.

"CASE I. In November 1862, I extracted a hard cataract from the right eye of Mrs. G. of Leeds. The wound healed rapidly, leaving a perfect pupil; and she was able to read No. 1 Jäger. There remained, however, a semiopaque film across the lower half of the pupil, which impaired the vision of distant objects and of the causeway. On September 29, 1863, I tore through the opaque capsule with needles. For three or four days the eye was sound and the vision good. The eye then became painful, red, and dim, and continued so, with slight remissions, for several weeks, and then became quiescent, vision being defective. In December, I related the case to Mr. Bowman; and he suggested that I should puncture the cornea, passing the needle through the iris and posterior chamber into the vitreous humour. On my return home, I found that during my absence she had a return of the irritation in the eye in a much more intense form. On visiting her (December 13th), she was quite prostrate with agony, which opiates had failed to relieve. The globe was hard (T 3); the iris was bulging and almost in contact with the cornea; the sight was very dim, and at times there had been complete blindness. I immediately punctured the cornea and iris. The pain was relieved in a few minutes, and in half an hour had ceased. The eye rapidly recovered, and is now quite sound. She reads No. 1 Jäger fluently; the pupil is perfect; the tension is natural; and the anterior chamber is of full size.

"A fortnight later I had a parallel case.

"CASE II. In the beginning of last November, G. A., aged 10, was struck in the left eye by a skewer, which pierced the cornea and wounded the lens. Eight weeks afterward (January 1st), I extracted what remained of the opaque lens by the 'suction-curette.' The posterior capsule appeared to have been ruptured at the time of the accident. Next day the eye became excessively painful and hard (T 3); the iris bulging toward the cornea. He was ordered to use atropine drops; and to take five grains of Dover's powder at bedtime. On January 4th (fourth day), as he had received no relief whatever, I punctured the cornea, transfixing the iris. The relief was instantaneous. On February 13th, he had no return of pain, or any other unfavourable symptom. On January 13, he read No. 20; he now read No. 4, notwithstanding a slight opacity of the cornea. Tension was natural; and the anterior chamber had regained its normal size."

MIDWIFERY.

39. *Induction of Premature Labour.*—Dr. MOIR brought before the Edinburgh Obstetrical Society the history of two patients who presented some points of interest in connection with the induction of premature labour:

CASE I.—Mrs. M. had been confined of an illegitimate child in the Maternity Hospital about five years before; and, as the brim was very narrow, he (Dr. M.) had been obliged to deliver her by means of craniotomy. She had subsequently married, and having become pregnant, had come to solicit his professional aid. She had ceased to menstruate on 12th January, 1863, and quickened on 20th May. Deeming it unsafe to allow her to go to the full term, he had determined to induce premature labour; and, as the deformity was great, he had decided upon operating before the completion of the eighth month. Accordingly he had begun to dilate the os uteri with his fore-finger on 3d September; this operation being repeated every day, and on the morning of the 9th the liquor amnii escaped, and slight pains supervened in the evening. On the morning of the 10th, regular pains having set in, he had sat by her the greater part of the day watching her progress and assisting the dilatation of the os with the finger; for the head resting upon the narrow brim was not pressed down very effectually into it. Between 7 and 8 o'clock P. M. the os uteri being completely dilated, and the head fairly engaged in the brim, and wishing particularly to see another patient, he requested a young practitioner who lived close by to wait on the case. Having returned soon after nine, he (Dr. M.) had found the child born with marks of forceps blades on its face, and the practitioner gone.

CASE II.—The second patient whose case he (Dr. Moir) had to notice, had been under his care in several of her pregnancies. On the occasion of her sixth confinement, he had delivered her between the seventh and eighth month of a living child. On the next occasion, he had had to go to Portobello to bring on labour, and left her delivery to the care of his friend Dr. Hill. It had so happened that he (Dr. M.) had to be in Portobello when her labour was going on, and having looked in to see her, he found a hand down and with some difficulty turned and brought away a dead child. She had lately come to the Maternity Hospital for her eighth confinement. He had dilated the os uteri as he usually does; and as the head was presenting, and pains going on steadily, he had left the case at night under the care of the house surgeon, giving him special instructions to be very careful in the management of it, for he (Dr. M.) believed that in some of these cases the head was very apt to slip aside, and lead to a shoulder presentation. He had been called in the morning, and found that the dreaded accident had occurred. He had then tried to push back the shoulder, but failed. The cord had been compressed for some time, and although turning was effected without much difficulty, the child was born dead.

He (Dr. Moir) had brought forward these two cases in order to illustrate two points in medical practice, and one in medical ethics. 1st. He believed that the simplest and safest means of inducing premature labour were those by which the dilatation of the os uteri was effected very slowly and gradually; and the plan he invariably had recourse to was to separate the membranes from within the os uteri by means of the fore-finger, passed within the os internum, and turned round and round within it so as at once to separate the membrane, and slightly to dilate the orifice. All those measures which had for their object the rapid dilation of the os and cervix uteri, he regarded as very unsafe, and for the vast majority of cases utterly unnecessary. 2^{dly}. He thought it of the utmost importance in these cases to endeavour to get the child to present by the head, and to have it delivered as a head presentation. The vitality of the premature child was low, and in turning, if any delay took place at all in the delivery of the head, it was apt to succumb. 3^{rdly}. He considered that the application of forceps under the circumstances related in the former of his two cases, had been quite unjustifiable, and that young practitioners should be cau-

tioned against needlessly and rashly having recourse to the use of instruments, when nature was perfectly competent to the completion of delivery, for the sake of gaining a little spurious fame. In that instance, the head was fairly engaged in the brim, the pains were progressing steadily, and there seemed every likelihood that in a couple of hours or so the whole process would be completed. In such circumstances he believed that the young doctor to whose care he had consigned the case, would have shown more regard for the safety of the child as well as for the character of his senior in the profession, by abstaining altogether from instrumental interference, and simply watching the natural process.—*Edinburgh Med. Journ.*, April, 1864.

40. *Complicated Case of Labour—Prolapsus of the Funis, &c.*—Dr. ALEX. R. SUTPHEN communicated to the Edinburgh Obstetrical Society, 9th December, 1863, the following case, which presents some features of interest in respect, 1st, of the diagnosis of pregnancy; 2d, of the duration of pregnancy; 3d, of the painlessness of parturition; 4th, of prolapse of the umbilical cord, and its remedy by the postural treatment; 5th, of the employment of the forceps; and, 6th, of the management of the third stage of labour.

“1st, *Diagnosis of Pregnancy.*—Mrs. A. B. was in full process of parturition when she arrived at the Infirmary, on the 29th of November; but she had left home by the advice of her medical attendant, who saw her the night before, and told her she was labouring under a dropsical ovarian tumour. And yet nothing in obstetrics is more easy, when on our guard, than to distinguish between a gravid uterus at the full term, and a dropsical tumour of the ovary. There may be a common sensation of fluctuation, a common smoothness of surface, even a common situation in the abdominal cavity, but it needs only the application of the stethoscope to detect the distinct placental and cardiac sounds, or the touch of the finger per vaginam to recognize the hypertrophied uterus, with the moving body in the interior. In the present instance, the mistake was made by a very able and accomplished practitioner, simply from his omitting duly to examine the case. He found the woman seated on a chair when he was summoned to see her, and, having already made up his mind that she could not be pregnant, he contented himself with putting his hand over the abdomen, and feeling the tumour through her dress. He then told her that she should go off to Edinburgh and have something done for it. And when she asked him for a line to secure her admission into the Infirmary, he added, that they were all interested in this kind of tumour at present, and that no recommendation was needed, for her case would commend itself. Now, the prejudice in his mind may have arisen from the circumstance, that when the patient, who is forty-four years of age, and the mother of seven children, had miscarried at the fifth month two years ago, he had been led to form the opinion, which he then expressed to her, that she could never again become pregnant. But he was further led astray by the circumstance that more than ten months had elapsed since the date of her last menstruation; and it seems not to have occurred to him that the case might be, as indeed it was, a case of,

“2d, *Protracted Gestation.*—The patient menstruated in the beginning of January; but the period lasted only two days, instead of four, as usual, having ceased on the 3d or 4th of the month. It was not till she felt “stirrage” in May, however, that she imagined herself to be pregnant, and began to think of making preparations for her confinement. She expected herself to have been delivered about the close of September or beginning of October, but it was not, as I have stated, till the end of November that the event took place. Supposing her not to have become impregnated till the period succeeding that at which the catamenia so abruptly ceased, she could not have carried the child less than 300 days; and if, as in the highest degree probable, both from the shortened menstruation and the date of quickening, she became impregnated at the period in January, we have a term of utero-gestation extending in this case to 329 days. The condition of the child at birth, and especially of its head, indicated a corresponding degree of development. It measured 21 inches in length, and weighed over 10½ lbs. The head measured 14¾ inches in circumference; the anterior fontanelle was small, and the membrane firm; and the

posterior fontanelle was so far obliterated, that the corner of the occipital could not be depressed below the parietal bones.

"*3d, Painless Parturition.*—Our patient having had all idea of pregnancy banished from her mind, set out from home, and reached the Infirmary without experiencing any uneasiness; and it was only whilst she was sitting in the nurse's room, explaining the cause of her arrival, that a sudden gush of water from the vagina restored her to the conviction that she was, after all, to give birth to a child. The uterine contractions were going on, although she was unconscious of any pain; and they must have been going on for some time, for when the clinical clerk, Dr. Watson, saw her, almost immediately after this rupture of the membranes, he found the os uteri already fully dilated, and the head exposed. The woman had given birth to all her former children easily enough; but with all of them she had, like other women, been conscious of the pain usually attendant on the uterine contractions. On this occasion, however, the first stage of labour was completed not only without any suffering having been experienced on her part, but also without her even being conscious that labour was in any degree in progress. And throughout the whole progress of the labour, the uterine contractions seemed not to be accompanied with the slightest pain; for before the head entered into the pelvic brim, the patient was unconscious of any sensation of suffering, when the hand over the abdomen could feel the uterus distinctly contracting; and afterwards, when the head was passing through the pelvic canal, there was no kind of pain, only a feeling of fulness resulting from the pressure of the head on the soft parts of the pelvis. I had never before met with a case of absolutely painless parturition; but Dr. Von Ritgen, the venerable professor of midwifery at Giessen, told me some years ago, that in the course of his practice he had seen seventeen women, who passed through the parturient process without any pain; and from his observation of these cases he had been led to form the conclusion that the act of parturition is normally and physiologically a painless one, which only becomes painful and pathological in consequence of the abnormal and artificial mode of life led by the great mass of civilized womankind.

"*4th, Prolapsus Funis, and its Replacement by the Postural Treatment.*—I first saw the woman on going to visit, for my uncle, the patients in his ward in the Infirmary at one o'clock P. M., about a quarter of an hour after she had been seen by Dr. Watson. On making an examination, I found that a complication had occurred, from the falling down of a loop of the umbilical cord, of four or five inches in length, opposite the left sacro-iliac synchondrosis. The umbilical vessels were pulsating vigorously, and the prolapsus must have taken place very shortly before, as there was none to be felt when Dr. Watson made the examination.

"We can easily understand the occurrence of prolapsus of the funis in cases of preternatural presentations and mal-presentations of the head, or where, from contraction of the pelvic brim, the presenting part of the child is prevented from adapting itself closely to the lower segment of the uterus; but the conditions of its descent in cases of normal head-presentation have not yet been accurately ascertained.

"In the present instance, we have a concurrence of three of the conditions that have been more especially insisted on as favouring the occurrence of this accident. *First,* the patient was a multipara, with a very relaxed and dilatable cervix uteri, and, perhaps, there was a want of tonicity in this part of the organ, associated in her with the absence of sensation during uterine action. *Secondly,* the placenta was placed very low down on the uterine wall, for the opening in the membranes was bounded in part by the placental margin; while, *thirdly,* the umbilical cord was inserted into the placenta within an inch of that part of its border;—two conditions, the importance of which have come to be abundantly acknowledged since the younger Naegele specially called attention to them, in an essay on the subject.¹ I might add, that the cord was of more than average length, and measured 21 inches, for this too has been noted in connection with

¹ H. Fr. Naegele, *Commentatio de causâ quādam prolapsus funiculi umbilicalis in partu, non rara illa quidem, sed minus notā,* Heidelb. 1839.

prolapsus of the cord; but what exact share is to be attributed to each of these elements in the production of the complication, it would be difficult to decide, for it is a kind of ease in which the mind of the accoucheur is for the time less taken up with the cause than with the cure; he is more anxious to avert the consequences of the accident, than to determine how it was produced.

And here, let me observe, that the great variety of expedients that have been adopted for the remedy of this complication, and the vast variety of instruments that have been contrived for the reposition of the descended cord, are a sufficient indication of the imperfection and unsatisfactoriness of each and all of them. And when we look to the recorded results of these various forms of treatment, and find that, even in the best hands, little more than two-thirds of the children are saved, while the average mortality in the general mass involves more than half, we are prepared to welcome a suggestion so simple and safe, and to adopt a measure so satisfactory as that described in 1858 by Dr. T. G. Thomas of New York, under the designation of 'The Postural Treatment.' *

* * * Although six years have already elapsed since Dr. Thomas read his essay before the New York Academy of Medicine, the proposal is not yet widely enough known, or, at least, the results of the practice have not yet been recorded in sufficient abundance to allow us to make a statistical comparison of it with the multiform methods of treatment which it promises to replace. But, I am well assured, that when it shall come to be adopted as the common method of treating cases of prolapse of the cord, when interference is required, the high mortality of this complication will be found to be very materially diminished.

"In the special case before us the result was in every respect most gratifying. Having placed the patient on her elbows and knees, I passed the fingers of the right hand into the vagina, and carrying down the displaced loop of cord into the os uteri, I could feel it slip away past the presenting head into the dependent uterine cavity. Friction was then applied to the uterus to increase the contractions; and these having been still further stimulated by the administration of a full dose of ergot, and the head having fairly entered into the pelvic brim, the patient was made to resume the ordinary obstetric position in about a quarter of an hour from the commencement of the operation.

"5th, *Application of the Forceps*.—The uterus continued to contract regularly and steadily, though painlessly, but the advance of the head was so very slow, in consequence of its large size and extreme ossification, that after the lapse of an hour and a half, or two hours, I deemed it right to act on the principle, which has ever received the hearty sanction and support of this society, that we ought to interfere to avert the evils of delay, rather than to wait till nature has done her utmost, and left the patient prostrate, and, perhaps, after all undelivered. The woman was accordingly brought under the influence of chloroform, when Dr. Watson applied the forceps and speedily effected her delivery. With the birth of the child in this manner, all peculiarity in the history of the case terminates. But I may still be permitted to add a few sentences as to the way in which we conducted.

"6th, *The Management of the Third Stage of Labour*.—With the left hand over the abdomen, I followed down the contracting uterus, as the body of the child was being expelled from its cavity; and then grasping the uterus, at first gently, then with more force, I compressed it until, within five or six minutes, the placenta, with the membranes, was driven into the vaginal orifice and removed. At first sight it will be averred that there is nothing new in this kind of procedure; and it is not as a novelty in practice that I mention it now. Yet I apprehend that though a few practitioners in the midst of us are in the habit of following out this plan in most of their cases, the ordinary practice of the profession in Britain materially differs from it, and consists, as we find it laid down in all our text-books, of waiting ten or fifteen minutes till the return of uterine contractions may have detached and expelled the placenta, then examining to discover the position of the afterbirth, and removing it; and when it does not come away at once, making gentle traction on the cord, while the uterus is stimulated to more energetic action by occasional friction, but not with such a forcible degree of compression as would suffice to separate and squeeze out the contents. Or if, in the practice of some obstetricians, the external manipulation of the

uterus is insisted on as the chief element for successful completion of the third stage, yet even with them the internal interference with the cord and placenta is not entirely laid aside."—*Edinburgh Med. Journ.*, April, 1864.

41. *Placenta Pravia; Detachment of the Placenta before the Birth of the Child; Arrest of the Hemorrhage; Child Born Alive.*—I was sent for by Dr. Bryant to see a lady in labour, who had several severe gushes of blood with her pains. Suspecting the cause, Dr. B. wished for assistance.

I found her weak from the loss of blood, but the pulse still to be felt quick, but not jerking. The os uteri was dilated to the size of a crown piece, with the placenta over it; it was quite dilatable, so that, as the cause of the hemorrhage was manifest, and there was no reason for delay, we determined that she should be immediately delivered.

In proceeding with the operation I passed the closed fingers easily within the os uteri, and gradually insinuated them between the uterus and placenta. I swept them round, completely detaching the placenta from the uterus, and then proceeded to turn. *The hemorrhage at once ceased.*

I was occupied from 10 to 15 minutes in the operation; and when the child was born it did not at first respire, although the heart was acting; with very little assistance, however, the respiration was gradually established and the child saved.

Both lady and child are now progressing most favourably.

In this case the placenta was separated from 10 to 15 minutes before the child was delivered, yet the action of the heart continued.—*Report of Dublin Obstetrical Society in Dublin Quarterly Journal of Medical Sciences*, May, 1863.

42. *Spontaneous Evolution.*—Prof. MURPHEY, of London, communicated to the Obstetrical Society of Dublin (Jan. 10, 1863) the following example of this. On the 4th of November, 1862, Dr. Scholfield Johnson was called to attend a lady in her first confinement. He arrived shortly before 10 o'clock A. M.; the pains were then good, and had been so previous to his arrival. After a very careful vaginal examination Dr. J. found the os uteri dilated somewhat larger than a crown piece, and moderately dilatable; membranes entire.

"Dr. J. diagnosed a head presentation; and, from the position of the posterior fontanelle and sagittal suture, was satisfied that it occupied the third position. No examination was again made until the liquor amnii escaped, the os being three parts dilated; and then, to Dr. J.'s astonishment, he felt the breech; the funis also descended, and gave some trouble: as the pulsations were becoming feeble, Dr. J. delivered his patient at 11.40 A. M. The child was nearly still-born, but was restored with some difficulty.

"The child had a swelling on the upper part of the left parietal bone, extending toward the occipital; it increased in size during the next 24 hours, and was larger than a pigeon's egg, and evidently contained blood. The ankle also was discoloured, and slightly swollen."

Is this a case of spontaneous evolution, according to Denman's explanation?

Dr. S. Johnson, a skilful practitioner, felt the fontanelle and sutures, so as to diagnose the position of the vertex, and made no subsequent examination until the membranes were ruptured, when he found the breech presenting. After delivery a tumour was found on the upper part of the left parietal bone, just where it ought to be in third positions.—*Dublin Quarterly Journal of Medical Sciences*, May, 1863.

43. *Sudden Death after Labour.*—M. HERVIET in an article on this subject, after referring to some of the recorded instances, observes that the anatomical lesions found have been very diverse, and sometimes insufficient to account for death; while even in some cases no pathological change has been detected. He suggests that, as the assigned causes are so various, there is probably some general influence independent of and above all these; and that this cause lies in the special physiological conditions of the puerperal state. The precise nature of this cause he does not pretend to determine; but, in connection with

it, he calls attention to the extraordinary facility with which puerperal women are affected under the influence of moral emotions.

Returning to the alleged causes of sudden death after labour, M. Hervieux specially notices the cases which have lately fallen under his own observation.

Syncope has perhaps been most frequently assigned as the cause of death : sometimes because no *post-mortem* examination has been made, sometimes because no pathological lesions have been found. There is no doubt that there has been syncope in some cases, where the patients have died suddenly after profuse *post-partum* hemorrhage. There is also reason for supposing that syncope has been the cause of death in more or less convalescent women, who have died suddenly in performing acts in which the horizontal position, hitherto rigorously maintained, has been for the first time abandoned for that of sitting or standing. In such cases, M. Hervieux admits the existence of syncope, although it has not always been proved ; but he thinks that death has been too liberally attributed to this cause in many cases in which the patients have been found dead in their beds, and no *post-mortem* examination has been made. In the following case, however, death appears to M. Hervieux to have been incontestably due to syncope.

M. M., aged 26, was delivered at the Maternité Hospital on December 19th, 1863. For some days she had merely slight fever and some pain in the abdomen. Labour had lasted thirty-six hours; about twenty ounces of blood were lost altogether. The face was pale and slightly puffed ; there was no albumen in the urine. On the 23d, she fainted several times ; and at night she was found dead. On *post-mortem* examination, the uterus was found reduced to the size of a fist, and presented at the left upper angle a superficial spherical swelling, of a violet colour, and as large as a walnut. It was filled with thick, yellowish well-concocted pus. At the right upper angle of the uterus, there was also an abscess of about the same size as the other, but lying deeply in the walls of the organ, instead of projecting. On cutting into the uterine tissue at various points, some drops of pus escaped by the openings in the veins. The uterus was otherwise healthy, with the exception of being somewhat softened and of a violet colour in the neighbourhood of the purulent deposits. No morbid appearances were observed in the broad ligaments, the ovaries, Fallopian tubes, or peritoneum. All the other viscera were perfectly healthy ; there was no air in the veins nor in the cardiae cavities ; nor was there any thrombosis in the pulmonary artery.

In this case, M. Hervienx attributes the fatal result to syncope, in spite of the symptoms presented during life and the *post-mortem* appearances. It is not the ordinary nature of uterine phlebitis and suppuration to cause death so suddenly. Without doubt, these were present in sufficient amount to produce the phenomena of purulent infection ; but such did not occur. The fever and abdominal pain had been slight, and the patient appeared to be progressing satisfactorily, when attacks of fainting set in ; and it is from the occurrence of these that M. Hervieux concludes that syncope was the cause of death. He does not, however, deny that the uterine suppuration was altogether unconnected with the patient's death. He believes that the intra-uterine purulent deposits either acted like certain chemical agents, favouring the fatal action of syncope by their mere presence ; or that the elements of pus, being absorbed into the circulation, interfered with the heart's action and produced its sudden suspension.

Another cause of sudden death in the puerperal state, less commonly recognized than syncope, is *thrombosis or fibrinous deposit in the pulmonary artery*.

M. Hervieux refers to two cases related in the English journals, and to one which occurred in the practice of M. Gosselin, and relates the following instance as having come under his own observation.

On August 19th, 1863, a young woman was confined at the Maternité. The labour was at full term, and normal. The patient's recovery was uncomplicated. On September 8th, twenty days after delivery, she sat up for the first time ; she felt well, and said she would go out the next day. She had been in the erect position about five minutes, when she grew pale, and her strength failed. When spoken to, she did not answer ; on being seated on a chair, she slid to the

ground. She had some convulsive movements of the face, and in a few seconds ceased to live. On *post-mortem* examination, twenty-four hours after death, no lesion was found in the peritoneum; the uterus was healthy, and of normal size. The pleurae were sound; the lungs were slightly congested posteriorly. The right heart was distended with black fluid blood. The left heart was small and contracted; its walls were thick. The pulmonary artery contained clots of dark blood and of fibrin in dense resistant masses. One of these was of large size, had a slightly pink gray colour, and was very resistant to traction. The fibrinous clots obstructed the trunk and two main branches of the pulmonary artery, but did not extend into the divisions beyond these. The upper and lower venæ cavae, and the veins of the neck and of the thigh, did not contain any clots. The brain was healthy.

In this case, death was not preceded by hemorrhage nor phlebitis. If, as is often the case, an examination of the pulmonary artery and its divisions had been neglected, death would have been attributed purely and simply to syncope. Indeed, it was when the patient rose for the first time that death occurred; and the erect position is a recognized cause of syncope in persons who have long lain horizontally. He does not, therefore, deny that in this case, as in many others, syncope was concerned in the production of death; but he asserts that this syncope and the consequent death was produced by the thrombosis of the pulmonary artery.

Another cause of death after labour is *air in the vascular system*. Of this, M. Hervieux relates the following case:—

On July 10th, 1863, M. F., pregnant for the second time, was delivered in the Maternité of a male child, after a natural labour. Her progress was favourable up to July 20th: and being of good general health and strong constitution, she had been selected, at her desire, as a wet-nurse. On July 20th, the lochia were very fetid; and an injection of infusion of camomile was ordered. Care was taken that the syringe did not contain air. The injection produced no pain; the fluid which returned was very fetid. On the 21st, the injection was repeated at 7 P.M., with the same care as before. The patient was now seized with rigour and grinding of the teeth, and lost about 750 grammes (nearly 22 ounces) of fluid blood. The hemorrhage was arrested by ergot. In the course of the evening, the patient became violently excited by a quarrel with one of her neighbours, and screamed frightfully. Opium was given in pills, without result; and the patient died suddenly at half-past 12 in the night, in a paroxysm of furious delirium. On *post-mortem* examination, at the end of twenty-three hours, the heart was found to be large, round, as if distended, and yielding readily to the pressure of the finger. The vessels proceeding from the heart were each tied in two places, and cut through between the ligatures. The heart being thus removed, was placed in water under an inverted jar. On making an incision into the right ventricle, large bubbles of gas escaped into the upper part of the jar. The left ventricle also yielded some gas, but much less than the cavities of the right side. On analysis, this gas was found to consist of oxygen, 7; carbonic acid, 11; and nitrogen, 82 parts in 100. The volume of the quantity examined was almost that of forty or fifty grammes of water. The lungs were perfectly healthy: there was no trace of emphysema or of congestion. The inferior vena cava was much distended with gas, which escaped with a slight hissing noise on making a puncture with a scalpel: it was quite inodorous. On making a larger opening, a blackish frothy liquid escaped, evidently a mixture of blood and gas. The vena cava was distended through its entire extent; but no gas was contained in the common iliac veins, nor in the veins of the uterus and ovaries, nor in the superior vena cava and its branches. The pulmonary veins contained a little gaseous fluid. There was no trace of inflammation or suppuration in the uterus: the cervix was rather soft, friable, and ecchymosed. On the inner surface of the womb, at a point corresponding with the fundus, were two small erosions, each as large as a pin's head. Small red clots were still adherent to them, and from them must have proceeded the hemorrhage which took place on the evening of July 21st. The Fallopian tubes and ovaries were healthy. From want of time, the head was not examined.

M. Hervieux observes that this is the first occasion on which the gas found in the veins in sudden death after labour has been collected and analyzed. As to its source in the present case, it could not, he says, be referred to cadaveric decomposition; for the body of the patient had not undergone any remarkable change; and, on the other hand, he has never found the heart and vessels distended with gas in women who have died of metro-peritonitis, although putrefaction rapidly takes place in such cases. The gas could not, for several reasons, have been introduced by the syringe in injection; and if it had been, how did it contain 11 per cent. of carbonic acid and only 7 per cent. of oxygen? M. Hervieux is disposed to attribute the presence of the air to the uterine hemorrhage which took place. He suggests that the mass of blood, diminished in quantity and impaired in quality, may have readily become the seat of some grave perturbation, of hysterical character, leading to the development of gas.—*Brit. Med. Journ.*, March 26, 1864, from *Gazette des Hôpitaux*, January 21, 1864.

44. Embolism, following Syncope from Post-partum Hemorrhage.—Dr. J. S. FLETCHER read before the Manchester Medical Society the following case, which is interesting in several points of view and is remarkable in consequence of its favourable termination.

"Mrs. R., aged 36, had previously borne two children. She had phthisis sixteen years ago, from which she recovered, but has been delicate. Her brother died of phthisis, and her father of diabetes. She was confined February 12th, with a girl. The delivery was very rapid, and was shortly followed by profuse hemorrhage, which produced slight fainting, lasting for some time. Her recovery was rapid. She was allowed to sit up on February 25th.

"On March 1st, she rose at 10 A.M. She had suckled the baby frequently in the morning. She ate rather a smaller dinner than usual; but, in other respects, nothing unusual was noticed. At 2 P.M., she was sitting up. The nurse had just taken the baby from her, and turned away; on looking round the moment after, she saw Mrs. R. with her lower jaw dropped, pale, and making signs with her hands. The nurse gave her a tablespoonful of raw brandy, and then got her upon the sofa. Mrs. R. was just able to name her next neighbour, and made signs to send for her. After this she could make no articulate sound.

"When seen half an hour after the seizure, she was lying upon the sofa, pale and much agitated; her head was hot; her hands wet with perspiration; the pulse in right wrist (the only one then examined) 104, full, and jerking. She moved both hands, to express, as it seemed, something wrong about them. The face was somewhat drawn to the left side; and the tongue, when protruded, was pushed to the right side. All power of articulation was completely gone. Mustard was applied to the back of the neck, to the stomach, and to the calves of the legs. Two grains of calomel were given, and ammoniated tincture of valerian was ordered. In about an hour from the time of the attack, she seemed to recover partially, and again spoke easily and plainly; but in another half hour she again became speechless, though conscious, and able to answer by signs.

"At 5.30, Dr. Fletcher saw her, and found that, though the pulse was easily felt in the right wrist, yet it was scarcely perceptible in the left; it was equally feeble in the brachial artery, but was easily found in the axillary, subclavian, and carotid. She could move both hands, but was unable to grasp with the right. The pulse had now become very rapid and weak. Brandy and sal volatile, and then brandy and ammoniated tincture of valerian, were given every twenty minutes; and afterwards five grains of sesquicarbonate of ammonia and half a grain of ammonio-tartrate of iron, in camphor julep, were given alternately with brandy and beef-tea every hour through the night. Blisters were applied behind the ears. Under this treatment, the pulse gradually improved slightly in strength, and was rather more easily felt in the left wrist; but it was still excessively feeble and small.

"2d. 8 A.M. She had dozed a little in the night. Her head was cool; the body was bathed in perspiration. The blisters had risen. The bowels were not open: the abdomen was distended with flatus. She had passed

urine voluntarily every half hour. The pulse was 96, stronger in both wrists, but still scarcely perceptible in the left. There was rather more strength in the right hand, but she was still unable to hold a pencil. An enema of turpentine and soap brought away a copious evacuation and much flatus. During the day, she gradually recovered power in the right side. The tongue, when protruded, was less completely pushed to the right side. The pulse also was diminished in frequency, but retained its force; and in the right wrist it had slightly increased in volume. The urine was pale, of specific gravity 1007, not albuminous.

"3d. There was great improvement in her appearance. The skin was cool, not perspiring; pulse quieter in right wrist, stronger in left. She could hold a pencil in the right hand, and wrote several words on a slate without much difficulty.

"5th. She articulated several words for the first time, as "baby, papa, beef-tea, good night." She wrote that she felt more natural altogether, but complained of pain in the left shoulder, and of tingling in the left arm and leg. The bowels were regular; the pulse better.

"6th. She seemed more nervous; had presentiments of impending evil. The pulse was softer and weaker. She wrote that the sense of smell, which had been impaired, was now all right again.

"From this time her progress was steady, but slow. Her speech was not perfect even so late as the end of May; but her strength had so far returned, that she was then able to go away from home.

"The treatment by sesquicarbonate of ammonia and small doses of iron was continued throughout, with increase of dose, and the addition of a quantity of the tincture of nux vomica."

The carbonate of ammonia was given in accordance with Dr. Richardson's theory as to its action in maintaining the fluidity of the blood.

Dr. F.'s theory as to the pathology of this case is: "that at the time of the hemorrhage after labour, a small clot was formed, which, during the time of feeble circulation, probably contracted some adhesion to the walls of one of the heart's cavities—most probably the left ventricle—and when the circulation became more energetic, this was detached, and moving along the aorta, was arrested at the left carotid and the left subclavian arteries, into each of which it entered, fitting on the small portion of the aortic wall between them in the form of a saddle; from which spot a portion was probably detached to be carried into one of the cerebral arteries at the time that she for the second time became speechless and partially hemiplegic, and the second portion into the lower end of the brachial when it stopped the pulse.

"It will have been remarked that in the account given of the symptoms, the left side was the one in which the circulation was interrupted, whilst the right side was the one partially paralyzed—this agreeing with the general rule as to cerebral paralysis.

"Another remarkable feature in the case was, that as the pulse improved in the left wrist, the use of the right arm also returned; and these two symptoms seemed to move on together—to me very clearly telling of the same process of removal or absorption of the several clots. This is remarkably seen in the account of March 3d: 'Pulse quieter in right wrist; stronger in left; can hold a pencil in right hand.'

"On the 5th, she could write words; and on the 6th, smell returned. It was a remarkable feature in the case that, although perfectly conscious, she could not for more than a week recollect the words she desired to write on her slate, and would very often use wrong words; indeed it was some weeks before she could always recollect the words she desired to use.

"This lady had been for years subject to rheumatic pains; but she had never had any severe rheumatic attacks; and, although I am quite aware that rheumatism has been found to be often associated with cases of embolism, I cannot suppose that this had any relation to this case—as I think it will be found that it is only in those cases of rheumatism giving rise to heart-disease that any connection can be traced between the two conditions.

"Certain conditions of the blood would undoubtedly give a disposition to the

formation of clots, by deposit from the blood itself; and the condition of rheumatism, I apprehend, may be one of these.

"In considering the question, as to whether or not an embolism can be formed in the blood by simple coagulation of a portion of its fibrin without the existence of any organic change in any part of the heart or bloodvessels—as I believe to have been the case here—we must remember that coagulation of the blood takes place much more readily with a slow and feeble circulation, and that after great loss of blood there is generally a relative excess of fibrin and a much quicker coagulation of the blood (Day), whether this loss occurs by bloodletting or by hemorrhage.

"Pregnancy, too, has its own particular condition of blood; viz., a low specific gravity, from an excess of water, fewer red corpuscles, and a relative excess of fibrin; all circumstances favouring the occurrence of embolism. Her anaemic habit is not an unimportant point in this case, and would aid in the development of an embolon.

"The coexistence of all these favouring circumstances lends additional probability to my opinion, that the case I have narrated was one of the formation of an embolon by simple coagulation; and I think I am warranted in saying that such a pathological condition does occasionally occur. The prognosis in all such cases of embolism would be more favourable than in those arising from organic disease, from the fact of the clot being less firm than detached masses of old-standing effusions are; and referring to Dr. Richardson's experiments on the coagulation of the blood we find that he could re-dissolve the clot of coagulated blood in serum alkalinified with ammonia. This I believe was done in the living subject in Mrs. R.'s case by the administration of ammonia; and I am disposed to give a share of the credit due for the result of this case to Dr. Richardson, for the important additions he has made to our knowledge of the physiology of the blood, although I am quite aware that his conclusions as to the cause of the coagulation have been very ably contested.

"The result of this case has been most satisfactory; for the long continued difficulty of articulation led to some little fear that a permanent difficulty of articulation might be the result, as it is said to be in all cases of recovery from embolism of the cerebral arteries."—*British Med. Journ.*, April 30, 1864.

45. *Fatal Hemorrhage after Delivery caused by the Pressure of a Placental Uterine Polypus.*—J. S. Beale, Esq., records (*Lancet*, April 23, 1864) an account of a *post-mortem* made by him of the body of a female who had died about three or four hours after giving birth to a fine large male child, the labour having been lingering, and the woman faint and exhausted.

"The body was well nourished; features calm; lips blanched; lungs healthy; heart large, pale, and flabby; no blood in the auricles or ventricles. A coagulum extended into the aortic orifice. The pericardium contained about six drachms of fluid. There was about two pints of fluid tinged with blood in the cavity of the abdomen. Liver pale; stomach pale, and containing a little tea; intestines distended with flatus; kidneys and other viscera healthy. Rising above the coils of intestines, and pushing them aside, was seen the uterus largely distended, and about the size of the uterus at the fifth month of gestation. The uterus was opened by an incision shaped like the letter Y, which exposed a fleshy tumour some seven inches in length, terminating in and surrounded by a very large coagulum of dark firm blood closely adherent to the tumour, and blocking up and distending the cavity of the uterus, and projecting within two inches of the external labia. The coagulum was carefully removed, and weighed over twenty ounces. The tumour was now distinctly seen attached by a pedicle over one inch in diameter to the right side of the fundus of the uterus. The pedicle was about three inches in length, and gradually expanded into a glossy, soft, even mass about three inches in breadth and seven inches in length. No lesion of the uterus or vagina was discoverable. The pedicle was firmly attached to the uterus, and was round in form; and the wall of the uterus was injured in its removal, so close was the union. On washing the tumour and incising it, it presented, when placed in water, the cotyledonous structure (only smaller) of the placenta, with the usual spongy cellular tissue.

"Never having seen, heard, or read of such a case previously, I gave my evidence to the effect 'that the presence of the tumour prevented the contraction of the womb, encouraged the formation of the coagulum, and caused death by the abstraction of the blood from the general circulation, which acting on a female of feeble powers, was sufficient to cause death.' A verdict to this effect was returned. I sent a portion of the structure to Dr. Kirkes, who kindly examined it microscopically, and wrote 'that the structure resembled placenta,' and threw out the suggestion of a portion of placenta left in utero. The attachment by pedicle, and the mark of the placenta proper a little to the left of its neck, with the smooth rounded shape of the mass, in my humble opinion negatived such a view. Dr. Kirkes very courteously at the same time directed my attention to an able paper written by Dr. Stadfeldt, of Copenhagen, and published in the November number of the *Dublin Quarterly Journal of Medical Science*, page 492: 'Dr. Stadfeldt states that Dr. Braun entertains the opinion that the fibrinous polypi are remains and products of pregnancy: he thinks, moreover, that they are not only consequences of abortions, abortive ova, mola carnosa, and retention of the placenta after a non-viable fetus, but that also the remains of the placenta of a fetus born at the full time may give rise to the formation of polypoid bodies in the uterus.' &c. Dr. Stadfeldt gives a case in illustration, with the *post-mortem* appearances. He says, 'The cavity of the uterus was enlarged, filled with an ovum-like body of the size of a large walnut, which from its porous, fibrous consistence and reddish-gray colour, was evidently composed of placental structure.' The report of such case will, I have no doubt, open a field for medical observation. The presence of such tumours may frequently be the means of causing death by obstruction to the proper closure of the womb."

46. *Double Vagina*.—Dr. CAPPIE communicated to the Edinburgh Obstetrical Society the following case, which he believed to be unique:—

"On the 27th June, 1859, I attended Mrs. T. in her first confinement. She was under the average size, spare in her make, and with sharp, rather irregular features. The first stage of labour was lingering, and after the os uteri was dilated and the membranes ruptured, the head still did not incline to enter the pelvis, although the pains were rapid, and rather strong.

"Having been away from the bedside for a short time, I returned, and on making an examination, I was surprised, and not a little embarrassed to find that apparently the os uteri had again contracted, and it was all I could do to get the point of the finger sufficiently within the os to enable me to feel the child's head. Moreover, there appeared to be no cervix to the uterus. The os was felt at the upper part of what seemed a smooth, regular *cul de sac*. This appeared very mysterious, and I felt quite at a loss what to make of it, or what to do in the circumstances. Previously, although the os could still be felt with the finger, it was completely dilated, and as the patient was in great distress, I had been intending very shortly to apply the forceps: but now the very possibility of giving any assistance seemed to be taken away. I withdrew my hand, and with more feeling of perplexity than I cared to show, I pondered for a while on the extraordinary occurrence. I never had heard of a case of the os contracting after it had been fairly dilated, and no satisfactory explanation presented itself to my bewildered mind. The case, however, was becoming urgent, and something must be done. I again made an examination, when—presto! change!—as if by magic, the original state of matters was restored—the head resting at the brim of the pelvis, and the os uteri dilated. Though now relieved, so far as the possibility of giving assistance to the patient was concerned, the mystery was as great as ever, and I made a careful examination to discover its nature. I then found that the vagina was divided through its whole extent by a fleshy septum—that, indeed, there appeared to be two vaginas, the one a very little larger than the other. At the lower part of the septum there appeared nearly as much room on the one side as on the other; but at the upper part, the neck of the uterus was on the left side. Close to the cervix, there was a communication between the two compartments, and it was through this I had been able to feel the head, when the finger had accidentally entered the compartment on the

right side. A satisfactory solution of the mystery was thus afforded, and also a probable cause of the labour being tedious. I did not get much time to reflect on the interest of the case, as symptoms of exhaustion were presenting themselves in the patient. She commenced to vomit black coffee-ground looking matter, and the appearance of prostration was so great, that I became alarmed for her safety. I immediately applied the Simpson's forceps, and on making traction, the septum gave way at the upper edge. I then tore it downwards with my finger as the head of the child made progress, and delivery was accomplished without any further unusual difficulty. On account of the apparent urgency of the case, I used force more strongly and with less interruption than I would have wished, and I believe it was owing to this circumstance that, though the child was lively the first day after its birth, it died on the third from convulsions. The patient herself recovered without a single unfavourable symptom, and I attended her in her second confinement almost exactly eleven months afterwards. Under strong, very forcing pains she was then delivered without instrumental interference; but in her third confinement, which was in March last, I had to assist her with the long forceps. All trace of the ridge caused by the division of the septum, and which was perceptible at her second confinement, had disappeared at her third. I have only to add, that on questioning the patient, she said she had never been aware that there was anything peculiar in her conformation.

"Dr. ALEXANDER R. SIMPSON had listened with much pleasure to Dr. Cappie's graphic narration of his very interesting and curious case. It was an instance of one of the rarest of all the varieties of malformation to which the female organs of generation are subject. A large proportion of these malformations could be referred to the circumstance that the organs had not advanced beyond a stage of development through which they normally pass at an early period of embryonic life. The uterus and vagina, as the Fellows were aware, were formed from the coalescence of the lower segments of the two ducts of Müller; and when, from any cause, the septum between these two tubes remained persistent, in whole or in part, instead of disappearing, there resulted to a corresponding degree, a duality of the genital organs; and when the many cases which had been recorded of uterine malformation came to be classified, they presented a beautiful parallel to the various types of uterus characteristic of different classes of the lower animals, and of different stages of foetal growth. We were sometimes reminded of these primitive types on observing the form which the uterus assumed in those cases of spasmotic contractions where the circular fibres running round the orifices of the Fallopian tubes, had been called into separate action, and gave the organ the appearance as if it were horned. Another indication of the original duality of the organ, of frequent observation, was the bulging downwards of the fundus between the Fallopian orifices. A case of this kind, but where the division into two horns were already becoming even more distinct, had come under his (Dr. A. R. S.'s) observation some time ago in a parturient woman who, during pregnancy, presented an appearance as if the child were lying to the right side of the abdomen, while a mass about the size of a child's head projected from the left side of the uterus, and in whom, after the child had been delivered, it was found necessary to remove the placenta. When the hand had been introduced in the interior, the right horn, which had been occupied by the foetus, contracted firmly round the thumb, while the four fingers passed into the left horn were engaged in detaching the adherent placenta. From this simple indication, as it were, of the original duality of the organ, all possible varieties might be met with of persistence of the septum, on to the development of a distinct uterus and vagina on either side of it. But Dr. Cappie's case presented this peculiarity, that while the septum between the two halves of the uterus had disappeared as usual, so as to form one single cavity capable of all the natural functions, the septum between the two halves of the vagina, which normally disappears before the intra-uterine one, had remained permanent, so as to form a double vagina. Such cases were extremely rare, and Kussmaul, in his exhaustive treatise on the malformations of the uterus, had contented himself with referring in a foot-note to a few recorded instances. In the atlas accompanying Förster's

systematic work on the malformations of man, two cases of this kind were figured, one of which—a preparation in the Würzburg Museum—very exactly resembled that observed by Dr. Cappie, even to having the septum imperfect at the upper part, so that the vagina had a single vault. The other figure showed a simple bridge consisting of a double layer of mucous membrane inclosing some muscular fibres, lying towards one side of the canal, and allowing of the passage of a thick quill between it and the vaginal wall. The only case in which he (Dr. A. R. S.) had met with this variety of malformation, was one in which, as in that instance, there was a small bridge of about an inch in length, lying half way up the left side of the vagina, underneath which he could pass the fore-finger: unless we might refer to the same category, a crescentic band of mucous membrane which he had felt in another case, to the right side of the cervix uteri, presenting none of the characters of cicatricial texture, but forming a small pouch or *cul de sac* towards the roof of the vagina that just fitted the tip of the finger."—*Edinburgh Med. Journ.*, April, 1864.

47. *Double Uterus and Vagina*.—Dr. ALEXANDER R. SIMPSON communicated to the Obstetrical Society of Edinburgh, the following case of this:—

H. B., at 22, began to menstruate first after she had reached the eighteenth year of her age, and catamenia continued irregularly for about twelve months after its first appearance. Having gone to town in the capacity of a domestic servant the monthly periods had disappeared during an entire year, and during the succeeding year only appeared four times. She had now begun to suffer from leucorrhœa, headache, and some of the other indications of ill-health associated with amenorrhœa; and after having employed some of the ordinary remedial measures for a time in vain, he (Dr. A. R. S.) had introduced an intra-uterine galvanic stem pessary. He had done so under the idea that the amenorrhœa was connected with an imperfect development of the uterus, for on examining, per vaginam, he had felt the cervix small and flat, and on passing the sound, had found the cavity to measure only $2\frac{1}{4}$ inches in length. She had not worn the instrument many days when menstruation had set in, and lasted seven days. On introducing the finger afterwards to withdraw the instrument, he was amazed to find the vagina and os uteri empty, whilst the hard bulb of the pessary could be felt to the left side, as if it had been lying outside the vaginal wall. A little further examination, however, had solved the puzzle, by showing that there was a septum running down the centre of the canal to within a short distance of the external orifice, and dividing the vagina into two, whilst the uterus was also double. The sound passed into the right uterine canal rather more than a quarter of an inch further than into the left, and when sounds were passed at the same time into each of the horns, the right one was found to turn toward and somewhat in front of the left. Five months had elapsed since that period, and the patient had thrice menstruated freely.—*Ibid.*

48. *Hypodermic Treatment of Uterine Pain*.—Dr. J. HENRY BENNET gives his testimony (*Lancet*, March 12th, 1864) to the extraordinary efficacy of the hypodermic treatment for the relief of uterine pain.

"During the last winter," he states, "I have used, with prompt and marked success, the hypodermic injection in several cases of severe dysmenorrhœa, with or without hysterical complications, and in several others of uterine and ovarian neuralgia, and of facial neuralgia having a uterine origin. The relief has been obtained in from fifteen to thirty minutes, without being attended or followed by the headache, loss of appetite, or nausea which are so frequently the result of the use of opiates in any other way, even by injection into the rectum. This latter mode of administering opiates has hitherto been my sheet-anchor in the treatment of uterine spasms and pain, and is certainly most efficacious; but it is not unfrequently attended by all the above-mentioned drawbacks, from which the hypodermic injection appears to be singularly free. In nearly all the instances in which I have tried this mode of introducing opiates into the system the sedative result alone has been produced: there has been no subsequent bad effect whatever."

" In one case of severe uterine torments and pain, the result of arrested menstruation from cold, I injected thirty minims of the solution of morphia. In half an hour the pains, which had been agonizing for the previous twenty-four hours, were calmed. A good night's rest followed; and the next morning the menses had resumed their course, and my patient was all but well. In another similar case, the uterine pain was accompanied by severe hysterical symptoms. The injection was followed by the same favourable result—ease, sleep, and rapid disappearance of all morbid symptoms.

" Owing to the complete control over the element of pain which the hypodermic injection of opiates appears to give, I have been able to carry on the necessary treatment in an interesting case of uterine disease which I should otherwise have been obliged to treat under chloroform or at a great disadvantage. The patient, a young German lady of twenty-four, came to Mentone last autumn, by direction of her medical attendants, with the view of spending the winter in the South. She was considered to be suffering from neuralgia, facial and general, and from nervous irritability of the system in general. She had been travelling with her husband from place to place, from bath to bath, in the search for health, for more than two years. On being consulted, I recognized the existence of a host of uterine symptoms, and found that the neuralgic and nervous illness had manifested itself after a severe confinement, which had occurred about three years ago. The discovery of extensive inflammatory ulceration of the neck of the womb gave the key to the state of ill health. Singularly enough, none of her previous medical attendants had suspected the uterine origin of the neuralgia. Such cases are always very difficult to treat—interference with the uterine lesion all but invariably rousing the neuralgia. I have repeatedly had cases of the kind that I could only examine and treat locally by giving chloroform to the full surgical extent on each occasion, and this I have had to do twenty or more times in the same patient.

" With the patient in question the surgical treatment of the ulceration was borne tolerably well at first, but as the diseased surface became more healthy, and consequently more sensitive, endurance diminished. Every time the sore was touched severe neuralgia followed, and the general health began to flag. In former days I should have suspended all treatment, and have sent the patient to the country for a couple of months, to allow the nervous system to calm down, and to let Nature do her best. In this instance such a course was not desirable, my patient being very anxious to continue the necessary treatment so as to be locally cured before we separated in the spring. I thought, therefore, of the hypodermic treatment, and tried the injection of thirty minims of the solution of morphia immediately after each uterine dressing. This course was attended with complete success; no neuralgia ensued, and I have been able to continue uninterruptedly the treatment now all but brought to a successful issue. On one occasion I omitted the precaution, and was sent for at ten o'clock at night. I found the patient a prey to a most distressing attack of facial neuralgia, which had come on an hour before. She was positively convulsed and shrieking with agony. Chlorodyne, sulphuric ether, &c., had been taken, with no relief. I injected the thirty minims of morphia solution, and in twenty minutes she was calm and free from pain. It was repeated next day, and the facial neuralgia has not returned. This lady will no doubt gradually recover her health and get rid of the neuralgia when the uterine disease is thoroughly cured.

" In a case of pure neuralgia, attacking first one and then another part of the body, I have injected from twenty to thirty minims of the acetate of morphia solution forty-two days in succession, without any unfavourable result. The neuralgia, which was very severe, was entirely subdued by it for about eighteen or twenty hours, when it reappeared, gradually increasing in intensity until the injection again relieved it. At the end of that long period the pains gave way, the treatment having been either curative, or having allowed the neuralgic attack to wear itself out. During the entire period of treatment, the patient, a very delicate lady, slept better than usual, ate as well (her appetite being usually bad, and the digestive powers weak), and was able to take part socially in all that was going on around her. No one, indeed, was aware except her

family, that she was suffering from so painful a malady. To my surprise, I was able to suspend the morphia suddenly without any of the distress and discomfort which is habitually observed when opiates have been long used and are abruptly abandoned.

"From what I have seen of the hypodermic system, I believe that its use is capable of great extension in the treatment of pain generally. I consider that the injection of a solution of morphia after any operation would deaden pain, and produce a general calm of the system both soothing and beneficial to the patient. I think also that this result might be obtained in most cases without the usual drawbacks of opiates taken internally."

Dr. B. also recommends the hypodermic injection in sea-sickness.

Dr. B. uses almost exclusively "a solution of acetate of morphia in distilled water. Nine grains dissolved in two ounces of water gives a strength about equivalent to that of laudanum. The liquor morphiae of the Pharmacopœia contains spirit, and I have found that it constantly occasions small patches of painful inflammation; without the spirit, on the contrary, it appears to be quite innocuous. A moderate sized steel needle or canula I find preferable to the small gold one. The steel canula is sharper, and passes easier through the skin. By pinching firmly the fold of skin that has to be pierced between the finger and thumb, its sensibility to the puncture is much diminished. It does not seem to matter much, as regards results, in which region of the body the injection takes place. I have principally chosen the praecordial region for uterine and general pain, and for local neuralgia a spot as near to the region affected as possible."

49. *Statistics of Queen Charlotte's Lying-in Hospital.*—Dr. GEO. B. BRODIE communicates to the Royal Medical and Chirurgical Society, May 10th, 1864, a paper on this subject. He stated that for the last 36 years, from 1828 to 1863 inclusive, the registers have been carefully kept, but no detailed accounts published; during this period 7736 patients (producing 7824 children), were delivered in the hospital; of this number 3611 were single women, who are admitted if it is their first pregnancy, and of these 126 died; the remaining 4125 were married women, of whom 72 died. The great mortality existing amongst unmarried women on their passage through the puerperal state was then touched upon, and some reasons were given to account for this fact, of which the separation from friends, their living in seclusion for some months previous to their admission into the hospital, exposure to atmospheric changes, and semi-starvation, all tending to depress the mental and bodily powers, were the principal. Some reference was also made to the married patients, who are often admitted into the hospital in labour very shortly after they are married, and a case in illustration of this which fell under the author's notice, was given, in which the patient walked from the church to the hospital, registered her letter as a married woman, and was admitted in labour within three days from that date; the mortality amongst the married patients would, therefore, be considerably diminished if it were not for the fact that so many are exposed during the period of gestation to the same depressing causes as the single patients. The first table (Table I.) showed the number of deliveries, and number of deaths, with the death-rate for every year since 1828. The number of women delivered at their own homes annually was also given, but of these, there being no trustworthy records, no further notice was taken.¹ A detailed investigation into the cause of death in each year was then entered into, the results of which were given in Table II.; for four years the hospital presented a clean bill of health. Puerperal fever (under which denomination its many varieties were necessarily included) was found to have been present in 123 cases, no less than 99 of which were in primiparae; 75 out of the 123 cases were among the single women; the death-rate from this cause was 1.57. The various periods of the year in which these cases of puerperal fever occurred was given in Table III., the result of which

¹ The total number of patients delivered at their own habitations from 1828 to 1863 inclusive, was 10,858. The number of patients, therefore, delivered in and out of the hospital during this period was 18,594.

went to show that the healthiest months—or the months in which the least number of deaths happened—were October and August; after these the following order was observed: November, April; January, July, September, December; May, June; February, and March. For eight years the wards were free from puerperal fever. Mania was found to have been present in 16 instances, 15 of these were in primipare, and no fewer than 11 were single women; in 12 out of the 16 cases the age of the patient was between 20 and 24. The remaining cases referable to puerperal causes, as post-partum hemorrhage, ruptured uterus, coma, exhaustion, etc., were 22, making, with the puerperal fever and mania, a total of 161. Of the non-puerperal causes, phthisis and diarrhoea were the principal; pneumonia and some of the eruptive fevers being also present; making altogether a total of 41, which with the 161 deaths from puerperal causes, gives the original number of 232. Another table gave the total number of cases admitted in each month during the 36 years, with the corresponding number of deaths from all causes during the same period, with a result very similar to that obtained when puerperal fever alone was observed. The death-rate of the hospital was then entered into, which was shown to be, for the married patients, 1.84; for the single patients, 3.48; for both together 2.6. The death-rate has varied considerably at different times; it was at its highest in 1849—the year of the cholera—and has varied from that to *nil*; in all cases but one, in which the death-rate was unusually high, the cause was found in the fact that the deaths were principally amongst the single women; for instance, in the most fatal year, 1849, the deaths of the single patients were just double the married; in 1850 there were 8 single and no married; in 1860, whereas 14 single women died, there were but 4 deaths amongst the married patients; in this lies the cause of the comparative high mortality of Queen Charlotte's Hospital. In another table was given the death-rate observed at the "Rotunda Hospital," Dublin; it was obtained by comparing the deaths with the number of admissions during the last 36 years, and was found to be 1.45 per cent. At the "British Lying-in Hospital" the death-rate from 1849 to 1861 inclusive, was 69, the number of admissions were very small, hardly exceeding 1550 patients. Both of these hospitals, however, profess only to admit married women. The author went on to remark that, in his opinion, the high death-rate of the "Queen Charlotte's Hospital" was in a great measure due to the fact mentioned at the commencement of the paper, that so many of the married women are exposed during the period of gestation to many of the depressing moral agencies of a single life. A comparison was then drawn between the mortality of a lying-in hospital with patients delivered at their own homes; the out-door midwifery department of St. George's Hospital (restricted to married women) was taken as an example; the number of patients delivered was 2800, the number of deaths 11 (one of these was a case of abortion, and happened in the hospital); the death-rate, therefore, was .38, very favourable when compared with 1.84 or 1.45, and this notwithstanding the filth and poverty in which they live. The author concluded this portion of the paper with a brief account of the foundation of the hospital, and the following sketch of the ventilation and plan:—

The hospital contains two floors for the reception of patients, one for married and one for single women. On each floor are six wards, containing three beds each, in which the patients are delivered, with an average of 1000 cubic feet space to each patient; but as each ward has not always its complement of three patients, the actual quantity of cubic space to each bed is sometimes increased. On each floor also is one convalescent ward, containing six beds; the walls of the wards are made of Parian cement, painted and varnished so as to enable them to be thoroughly well washed; throughout the building runs a corridor 84 feet long by 7 feet wide, having a window at each end, and a large staircase opening at its centre, in the roof of which is a ventilating opening, protected by a cowl; the whole of the hospital is thus completely ventilated. Each individual ward is ventilated by means of an opening in a shaft that is carried to the top of the building, an Arnott's ventilator in the chimney, and an opening (that can be closed) over the door, communicating with the corridor; the windows are on the plan adopted at St. George's and the Middlesex hospitals,

which form ventilators of themselves. In each ward there is a constant supply of hot water, and the corridors are heated by means of pipes containing hot water. The water-closets, one on each floor, are external to the building, and approached through an ante-room, so as to be entirely cut off from the rest of the building. The soil is for many feet of the best gravel, and every attention has been paid to the drainage. As soon as a patient is able to be moved from the ward in which she has been delivered, she is placed in the convalescent ward, where she remains until she leaves the hospital. As soon as three patients have been delivered in a ward, it is not again used till it has been well cleaned, as well as the beds and bedding; by this plan each ward remains vacant for ten days or a fortnight before patients are again received into it. When a case of puerperal fever occurs, the ward is freshly whitewashed, and the walls thoroughly washed down (in some cases repainted), the bedding purified and remade, and the ward not occupied again for at least a month. Everything has been done, both in the construction of the building and in the arrangement for the management of the patients, with a view to render them as little liable to disease as possible. In Section II., facts having more direct reference to the *fœtus* were investigated. Of the total number of labours—7736—there were 2 cases of triplets and 84 twin births. Out of the 7650 single births, there were 235 abnormal presentations, or one in every $32\frac{2}{3}$ cases, with a fatal result to the mother in 5 cases, or 1 in 47 cases; the head of the child, therefore, presented in 7415 instances; but of these the face presented in 15 cases, or 1 in $494\frac{1}{3}$ cases, and in 103 instances the child's head passed with its face looking towards the pubis of the mother. The funis was prolapsed in 22 cases, being met with once in every 348 cases; of the 22 cases 14 of the children were stillborn; in 12 cases it was prolapsed before the head, and of the children 9 were stillborn; in 6 before the feet, and of the children 3 were stillborn; 2 were cross births, and both stillborn. The upper extremity presented in 21 cases, or 1 in 364 cases, the breech in 139 instances, being 1 in 55 labours; of the children in these 139 cases, 88, or 1 in $3\frac{7}{9}$, were stillborn. The lower extremity presented 49 times, or 1 in 156 labours; 18 of the children being 1 in $2\frac{1}{6}$ were stillborn. Placental presentations occurred 4 times, or 1 in $1912\frac{1}{2}$ cases. Twin labours were then gone into, and a table given to show the presentation in each case; in by far the greater number of instances—namely, in 39 out of the 84 cases—both children presented naturally; next to this, cases in which the head of the first child, and the nates or inferior extremities of the second child presented, were most frequently met with—namely, in 22 cases. The first child presented with the nates in but 11 cases, and the lower extremity was similarly met with in but 6 cases. This section concluded with a notice of the operations. Craniotomy was employed in 21 cases, being 1 in $361\frac{1}{2}$ cases, and was followed by the death of the mother in 6 instances. Forceps were applied in 49 cases, or 1 in 158 instances, and their application was followed by the death of the mother in 10 cases, or 1 in $15\frac{1}{2}$ cases.

Dr. Webster, after a few remarks on the value of the paper, said that, having paid considerable attention to statistics of disease generally, he would make a few remarks on several points in the paper. The author has found that the mortality of the single women was double that of the married. Admitting the influence of distress of mind and privation to which the author had alluded, he thought it ought to be taken into consideration that the single women were always admitted for their first child, and he believed that it was admitted that there was greater danger on a first than on a future delivery. The paper was of great importance, too, as regards the question whether it is desirable or not to have lying-in hospitals. It was a question which had been discussed throughout Europe. At one institution with which he (Dr. Webster) was connected—the St. George's and St. James's Dispensary—there had been during the last seven years 1515 deliveries and not one death. All these women had been delivered at home. In the British Lying-in Hospital there had been 1500 deliveries in that institution, and again no deaths. It was singular, the speaker continued, that there should be no difference when the great difference of the position of the patient was taken into consideration: in one every possible comfort, in the other great poverty and distress. He (Dr. Webster) had found

that during the last seven years 175 women had died in the lying-in hospitals of London generally, and, as stated, during a like period, there had not been one death in the St. George's and St. James's Dispensary out of 1515 cases. This, he thought, told against the lying-in hospitals. In Vienna the mortality had been 30 per cent. Then as to puerperal mania. There were sixteen deaths from this cause, 11 single women and 6 married, but there was no statement as to the number of patients who had had the disease and had recovered. At Bethlehem Hospital the mortality from puerperal mania was only 4½ per cent.

Dr. F. W. MACKENZIE thought the opinion of the profession would change as to the advantages of lying-in hospitals. He held that the number of fever cases had nothing to do with the hospital, but with the individuals admitted. If any one, he continued, would study the arrangements of Queen Charlotte's Hospital, comparing it with others, and would consider the nature of the cases admitted, the conclusion arrived at would be that the real cause of the fever case was not in the hospital, but in the patients who were admitted. Patients were admitted who were in a state of starvation, without friends, and with no home. Cases of this kind would die anywhere. Last week, Dr. Mackenzie said, a ballet dancer was admitted, who died after confinement of a dead and putrid child. She had been seduced. She had then no means of earning a livelihood; was very much exhausted, and in great distress of mind. A case of this kind could not be put down to any supposed defect in the hospital. The fever, he said, was secondary to some general condition in the patient, and was not in itself a disease to be taken in a hospital by a healthy woman. The whole theory of puerperal fever was wrong.—*Med. Times and Gaz.*, May 28, 1864.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

50. *On the Prevention of the Poisonous Effects of Anæsthetic Agents.*—M. SIMONIN, in treating on the collapse of the circulatory and respiratory organs during the employment of anæsthetic agents, states that the two most important points to be observed are the insensibility of the temporal regions and the narcotism of the masseter muscles. In speaking of the peripheric insensibility resulting from the inhalation of anæsthetic agents, and from their use *per anum*, he says that all parts of the periphery of the body do not become insensible at the same moment: thus it takes several seconds before anæsthesia is produced on the skin of the forehead and the temporal regions, and several minutes to produce the same result on the skin of the hands and the feet. The time which elapses between the narcotizing of the extremities of the limbs and that in which the skin of the frontal and temporal regions ceases to react is rather longer, when, instead of the vapour of chloroform, the patient inhales that of ether. This time is longer still, when ether is introduced *per anum*. To discover in time the anæsthesia of the various parts of the periphery of the body, the action of the anæsthetic agents must be decreased, and punctures be made on the different parts above mentioned, about every ten seconds or oftener. The disappearance of these phenomena takes place in an inverse order to that of their appearance. With regard to the action of the same agents on the muscular system, M. Simonin opines that the contraction of the masseter muscles appears last of all during the excitation of the muscular system, often when the rest of the system is relaxed. This local rigidity is the indication of a very near collapse of all the organs, especially those of the circulation and respiration. Anatomy points out the cause of these facts, and the explanation shows the importance of their observation during anæsthesia. It is the fifth pair of nerves which gives sensibility to the skin of the temples; it is the same pair which furnishes ramifications to the masseter muscle. This fifth pair arises from the lateral and anterior part of the medulla oblongata, and as soon as the parts to which it distributes itself, either the organs of sensation or of movement, show the commencement of narcotization. The movements of the respiration and

circulation soon become disturbed, for the vital point is in its turn about to be influenced. The author also remarks that the sensitive action of the nervous filaments pertaining to the skin is extinct before the motor action ceases. This normal absence of synchronism shows that there is no reason to be uneasy even when the sensibility of the temples ceases to exist. This is an important fact, and is the result of researches made at Nancy, where it was shown that subcutaneous anaesthesia did not exist anywhere so long as sensibility remained in the temples. To this rule M. Simonin only found one exception during sixteen years' observation. In many cases collapse of the masseter muscles may be seen without life being compromised; uneasiness should, however, arise in the mind of the practitioner with this last period of muscular insensibility. The permanence of muscular rigidity which the contraction of the jaws produces is a favourable physiological limit, which he must try not to overstep, whenever the opening of the mouth is not one of the conditions of the operation to be performed. Trismus has always reassured the experimentalist, when several other symptoms of profound intoxication during anaesthesia have alarmed him. It is thus important to ascertain the disappearance of sensibility in the temporal regions, and to be assured of the state of the elevating muscles of the lower jaw, since the observer has then under his eyes, and with the greatest ease, the course of the progress of the intoxication of the medulla oblongata, and in the generality of cases, while ceasing to employ a poisonous agent, he has often the power to prevent the last and dreaded phases of anaesthesia—namely, collapse of the circulation and of the respiration—in a word, death.—*Brit. and For. Med.-Chir. Rev.*, April, 1864, from *Revue des Sociétés Savantes*. June 26th, 1863.

Dr. B. W. RICHARDSON bears testimony (*Brit. and For. Med.-Chir. Rev.*, April, 1864, p. 534) to the accuracy and importance of M. Simonin's observations. Dr. R.'s experience, like M. S.'s, and derived from long research, is that the muscles which raise the lower jaw are the last that collapse under the use of anaesthetics. Hence we have seen more dangerous symptoms during profound anaesthesia for operations on the mouth, such as extraction of teeth, than under any other circumstances. The exposition of M. Simonin is also in our opinion exceedingly sound and common-sense, and we specially recommend his advice respecting the necessity of observing the contraction of the elevators of the jaw to those who are learning how to administer narcotic vapours with scientific judgment and knowledge.

51. *The La Pommerais Case.*—A homeopathic practitioner of Paris, named La Pommerais, has been lately condemned to death for the murder of his mistress, who he had previously induced to insure her life in different offices to the amount of one hundred and ten thousand dollars. The payment of the life-insurance, in this case, has given rise to very interesting medico-legal questions.

First, it may be asked whether the sum for which the life of the victim of the charlatan Pommerais was insured, will have to be paid over to her children, and, secondly, whether the transfers executed by her in favour of La Pommerais are valid, and his representatives will have any claim on the companies. The insurances, it is contended, will be available for the children of the murdered woman. It is established, and the companies have not, it is believed, disputed the fact, that they did not sign the contracts drawn up in her name and for her behalf without having taken all the preliminary steps usual in such cases, and obtained all the information respecting the insurer when they covenanted to pay a specified sum. The conditions of the contract between Madame de Pauw and the companies were fulfilled so far. She had been visited by the companies' medical officers, who reported that her health was excellent, and that the insurance might be safely effected; and the first premium was punctually paid. The policies of insurance specify only two cases where insurance companies may refuse payment—suicide or death in a duel; but when the party insured is murdered, his or her heirs must not suffer by the crime of a third party, nor are the companies released from their engagements. It was the woman's life that was insured, and not La Pommerais's; and in no case would the latter take anything by the transfer of her title to him, as it was shown to be obtained by fraud.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case in which a Fragment of a Shell Encrusted with Calculous Matter, was Extracted from the Bladder by Lithotomy. By JOHN F. RANDOLPH, M. D., Surgeon U. S. A. In charge of U. S. General Hospital at Jefferson Barracks, Mo.

Private Conrad Lotes, Co. A, 23d Regiment Indiana infantry, German, aged 32, was admitted into U. S. General Hospital at Jefferson Barracks, Mo., August 5, 1863.

He was wounded during the siege of Vicksburg, June 25, 1863, by a fragment of a hand-grenade entering the right nates at a point parallel with, and two inches from the end of the coccyx, and taking a direct course towards the bladder, in which it entered and lodged.

The patient says that urine passed by the wound immediately after its reception. At the date of admission into this hospital, his general health was considerably impaired, and he complained of great pain in the region of the bladder; the urine passed by the wound, very little passing by the urethra and that largely mixed with pus and blood. Warm fomentations were used locally and internally, mild diuretics, stimulants, and nutritious diet.

The ward surgeon, under whose care the patient first came after admission, reports having introduced a sound and failed to detect any foreign body.

Feb. 1, 1864. Patient was found suffering from irritative fever; pulse 100; tongue coated; skin, hot and dry; loss of appetite; restlessness; exacerbation of fever every afternoon, with flushed cheeks, and complaining of slight pain in the region of the bladder. The greater quantity of urine continues to pass through the wound; that which passes by the urethra still contains pus and mucus, and has a very offensive odour. *Treatment.*—Quinine, stimulants, and beef-tea.

20th. Somewhat improved since last report. A catheter was now introduced into the bladder, detecting the presence of a foreign body. There was great difficulty attending its introduction, in consequence of an enlarged prostate and great tenderness at the neck of the bladder. Lukewarm water was injected, which afforded temporary relief; a small portion of the water escaped by way of the wound.

March 9. Patient transferred to another ward preparatory to the intended operation. The wound is partially healed, but still open, admitting a large-sized probe. His general health is poor, he is anaemic; rather thin in flesh; appetite moderate; pulse excitable, with febrile symptoms. *Treatment.*—Stimulants and nutritious diet.

19th. Has improved in flesh, strength, and general appearance. An unsuccessful attempt was made to introduce a sound into the bladder, and the wound was probed, which excited chills and febrile symptoms for a few days, and an increased flow of urine and pus through it.

April 2. Patient is in excellent spirits, is quite fleshy, with flushed cheeks and bright eyes; is extremely anxious for an operation. He was put under the influence of a mixture of equal parts by bulk of chloroform and ether, and the operation of lithotomy by lateral incision of left side was performed in the presence of the medical officers of the hospital, and Prof. J. T. Hodgen, of St. Louis, and Surgeon J. K. Rogers, U. S. V. I am much indebted to Prof. Hodgen, and Ass. Surgeon Tilton, U. S. A., and to Act^g Ass. Surg's Welch, Marston, and Allen for their efficient assistance during every step of the operation.

Great difficulty was experienced in the extraction of the fragment, owing to its size and position. It was found to be rectangular in shape, measuring two inches in length, seven-eighths of an inch in width, and three-eighths in thickness, and was from a shell three-quarters and one inch in diameter. It weighed two ounces and five grains troy. It was thickly incrusted with the earthy phosphates, but the deposit crumbled from the end grasped by the forceps. The bladder was well washed out by a copious injection of water. The patient did not react very well, and about two hours afterwards had an attack of rigors followed by considerable fever. Pulse 126. *Treatment*.—Quinia and morphia, with stimulants; the wound to be dressed twice daily.

3d. Rested well; pulse 96; tongue coated, whitish-brown; appetite moderate; some febrile symptoms; at 12 M. pulse 84; at 7 P. M. pulse 100.

4th. Passed a restless night. Pulse 96. Compound cathartic pills given.

5th. Rested better; bowels have not been moved; saline cathartic given, which operated freely.

6th. Doing finely. Pulse 84. Appetite improving, and tongue cleaning.

7th, 8th, 9th. Continues to improve.

10th. Wounds discharge but little pus; fresh cut looks clean and healthy, although the urine still dribbles from it; scarcely any passes by the old wound.

12th. Passes his urine quite freely, and for the first time through the urethra.

14th. Urine still passes by the urethra, but in moderate quantities and frequently; both wounds are doing well, and urine dribbles in very small quantities; patient has fever, the pulse rising at times to 90 and 100. Since the 12th but little pus is observable in the urine. This afternoon the patient had a severe chill and fever. Quinia was given.

15th. Patient better; passes his urine easily and frequently; it is considerably clouded with pus.

16th. A slight chill recurs, with fever.

17th, 18th. Improving.

19th. Patient's despondency is leaving him; appetite improving; pulse 84 to 96: turned in bed and lies upon his side, the first time in ten months.

20th. The wounds have continued to heal finely; discharge of pus very slight, no urine through the wounds for several days.

21st. Patient is very cheerful and buoyant; urine passes several times in 24 hours, and is quite free from pus or sediment.

23d. Wounds entirely closed, and dressings omitted.

24th. Dressed and out of bed; sits and walks comfortably.

27th. All treatment discontinued. Patient is being rapidly restored to his usual health.

Aneurism of the Ulnar Artery cured by Compression. By PHILIP S. WALES, M. D., Surg. U. S. N.

Daniel McConnell, age 22, born in Ireland, admitted into the hospital with the following history from the surgeon under whose care he was at first.

"Admitted Feb. 2d, 1863, from U. S. Steam Tug "Violet," with acute rheumatism affecting principally the left knee-joint, and soon after all the larger joints of the body. By the 20th he was much improved, nearly free from rheumatism, but on the morning of that day reported a swelling of the right forearm, which he said had suddenly appeared during the night before. Upon examination, it proved to be aneurismal in its character, and seated upon the upper part of the ulnar artery near the bifurcation of the brachial; the pulsation of both ulnar and radial at the wrist was diminished, pressure upon the brachial caused the pulsating tumour to become flaccid. Upon the external and anterior aspect of the forearm is a small cicatrix, and another obliquely above on the ulnar side. The patient's account of them is that they are the result of a punctured wound made with an ice-pick, received by him five months ago. He reports that after his recovery he had no further trouble until the present time. The aneurism is believed to be of a traumatic character, and to have originated in the wound referred to, and not from rheumatic cachexia. In view of the general condition, the treatment by pressure has been considered better for the present. A species of tourniquet already applied and appearing to answer tolerably well is sent with him, so that his treatment in that way may be continued if deemed expedient."

Now the patient's health is much shattered by the attack of rheumatism; bowels constipated, appetite gone; arm pains a good deal, with a tendency to inflame; the tumour is seated under the pronator radii teres, palmaris longus, and flexor sublimis digitorum, measures 13 inches in circumference around the limb, and is about the size of a large hen's egg, pulsating synchronously with the heart, with the aneurismal thrill well marked. The forearm is maintained in a position midway between pronation and supination, and the arm semi-flexed, and any attempt to change these positions is accompanied with acute pain.

The general treatment was begun with tonics and good, nutritious food, in order to establish a healthy condition of the blood essential to cure. The apparatus above spoken of consisted of a semicircle of metal, and its ends supporting an ordinary tourniquet and pad; the material, soft copper, permitted its diameter to be diminished when a slight degree of pressure was brought to bear upon the artery, thus grasping the arm and producing a general arrestation of the circulation in the whole limb; besides, the patient could not stand it.

I then constructed the following apparatus, which, in my hands, has acted admirably. First, two well tempered steel rings of convenient diameter were selected, and connected by two metallic bars, keeping the rings from each other at the distance of shoulder from a point just above the olecranon. One of these bars has a width of two inches, concave and fitting the outside of the limb; the other is narrower and supports three pads at equal distances of its length, at the ends of long screws working through it; this bar should be movable to correspond to the course of the brachial artery, and can be secured at either end by thumb-screws. The whole apparatus, now covered with buckskin, is ready for use, and when properly adjusted, the pressure is brought to bear upon the artery by the pads alter-

nately, or what I think better, by all at once and very lightly, for the force necessary to arrest the flow of blood in that vessel, is distributed among the three pads, and hence a third only of it is exercised on any one part of skin at once. However complete arrestation of the circulation, not being necessary as a mere matter of experiment, and for my personal gratification, I frequently suppressed all pulsation in both ulnar and radial for 12 hours at a time, with comfort to the patient.

March 16. The apparatus has been unremittingly applied, but there is only to report less stiffness of the limb; no pain; general health improving.

April 1. General health much improved; has gained largely in flesh; the tumour is smaller, the circumference of the limb being 12 inches now. I should observe that the patient has become *au fait* in the use of the instrument, and after 10 days in bed, got up and dressed, and would not be persuaded to lay by any more.

May 1. Still improvement; the tumour is consolidating, a hard knot being perceptible at its upper end. The man keeps the apparatus on still, can flex, pronate and supinate the arm with ease, and declares it to be as strong as ever, and, in fact, uses it as if completely restored. How great would be the advantage if in all cases of aneurism, out-door exposure could be continued with an efficient mode of compression! The confinement and irksomeness of weeks in order to obtain good results from the present methods of cure, are enough to wear out the patience and courage of the bravest, to say nothing of the damage to the general health that plays so important a part in the compression cure, which must suffer by this constant fretting and mental inquietude so induced.

20th. The man has been constantly on the mend, though slow; he has hardly thought of the matter, having free scope for exercise, and the range of the hospital to amuse himself with his shipmates. The tumour is solid; all the motions of the limb good; will keep on the apparatus, being no annoyance, for a few days longer.

Case of Spotted Fever. By ROBERT T. EDES, M. D., Ass. Surg. U. S. N.

H. G., a light mulatto, 15 years old, apparently healthy, was shipped at month of Red River from a neighbouring plantation, only a few days previously to the commencement of his illness. He complained, on May 16, of sore-throat, for which magnesiae sulph. and a chlorate of potash gargle were prescribed. In the afternoon twenty grains of quinia in two doses prescribed for the next morning.

May 17. Last night was delirious. Passed several operations in bed. His passages said to have been dark, latterly yellowish and watery. Pulse 106. Tongue with very thick, white fur. Seems much prostrated. Eruption was noticed this morning of purple spots the size of a pin's head on breast; larger, aggregated and slightly raised on extremities. Brandy and water $\text{a}\bar{\text{a}}$ part. æ quales ij , every 3 hours.

For this day and the next our endeavours were to get free passage from the bowels and to produce vomiting. In the latter attempt we were successful, but in the former, notwithstanding the use of croton oil, senna and injections, the result was not very marked, the few dejections produced being in some cases probably but little more than the injection. His head was drawn back, his eyes were bright, and there was at no time any "typhoid" appearance. Ice was applied to the back of his neck, which produced a slight chill. The pulse ranged from 88 to 69. The brandy was continued.

19th. Took several injections and had one or two passages last night. Head drawn back on shoulders. Talked a little this morning. Says he has pain in head and belly. Pulse 74. Continue. Dr. Brance, of U. S. S. Carondelet, saw the patient this morning, and remarked upon the similarity of the case to those of spotted fever at the Naval Academy. *Afternoon.* One passage this morning, probably little else but injection. Cups applied to back twice. Took fl. ext. senna and magnes. sulph. before 3 P. M. Has spoken a little. Blood drawn coagulates quickly. Nothing peculiar observed under microscope. Continue brandy. Repeat cups. *Evening.* No operation from senna. Pulse over 140. Blister to calf of each leg.

20th. Could not swallow medicine last night. Took injections of brandy and beef-tea every two hours, which were almost immediately returned. Moaning continually. Continue. *Evening.* Pulse 200. Some subsultus and trembling of the whole body. Head and neck sweating. Rest of body hot and dry. Continually moaning. Head not so much drawn back. Swallows rather better. Has taken considerable brandy and some beef-tea by the mouth. Had cups to back. Pupils rather dilated. Continue brandy. Beef-tea occasionally. Fl. ext. senna $\frac{3}{4}$ ij. Sponge with water and alcohol.

21st. Not moaning so much. A good deal of subsultus. Pulse extremely rapid. Breathing very rapid. Still swallows pretty well.

Died at 10 A. M.

Autopsy four hours after death.

Dura mater congested; some vascular streaks running towards growths observed at several points on the surface of that membrane; these growths were slightly elevated above the dura mater, and corresponded to sharply defined cavities extending deeply, and, in one instance, nearly through the calvaria. They resembled in appearance warts more than anything else. One small group of granulations of the same kind was observed at the apex of left middle lobe. On removing dura mater it was found adherent to the brain at these points; the dura mater being torn away, the growths remained on the brain.

The surface of the brain was covered with a layer of greenish matter purulent in appearance, but of almost cheesy consistency. This covered some convolutions mostly near the vertex, and in other places followed the sulci, nowhere extending deeply into them. The base of the brain, especially the pons and medulla oblongata, was covered with a similar substance, but paler and softer. Think this deposit occupied the subarachnoid space.

The ventricles contained much serum, which coagulated after a few minutes' exposure to the air, and the middle cornua contained a little greenish pus. The substance of the brain was congested, but otherwise apparently healthy. Heart, spleen, and liver rather large. The liver had several yellow patches on anterior edge and upper surface. A section appeared somewhat finely mottled. Kidneys normal. Stomach and intestines inflated, the former having its mucous surface marked with several pinkish spots.

The inflammatory exudations consisted of cells like pus-cells, but with more granular contents, and less distinct nuclei, together with fibres which were not isolated but seen in the mass.

The granulations treated with acetic acid showed fibres with large numbers of distinctly defined normal and oval bodies the size of pus-cells, probably the nuclei of small cells. The cells of yellow portion of liver resem-

bled those of other portions, except that they were more granular and the nuclei less distinct.

I noticed in the January number of this "Journal," an article by Dr. Wales, on the "spotted fever" at Newport, and two shorter ones upon the disease as it appeared in Pennsylvania and Indiana. The April number contains an article upon cerebro-spinal meningitis. Only one account of an autopsy, however, is given, and that not a very detailed one.

I have been induced to send you the accompanying account of my case, by the fact that, while several symptoms, the sore-throat (noticed in two of Dr. Wales' cases), the delirium, the drawing back of the head, and especially the eruption appearing so early in the disease, show pretty plainly that it belonged among spotted fever cases, the autopsy showed, if possible, more conclusively, that it was a case of cerebral if not cerebro-spinal meningitis.

I do not imagine that the case is a singular one, but it seems to me, from the distinctness of both the symptoms and the lesions, to supply a missing link among the reports on the subject, published in the two numbers of the "Journal" I have mentioned. There was no epidemic, this being the only case in the ship, and, so far as I know, in the squadron at that time.

FLAGSHIP "BLACKHAWK," MISS. SQUADRON, May, 1864.

Case of Lumbricoides.—Dr. Pardue, of Haverstraw, New York, has communicated to us a case of a delicate female, who suffered greatly from worms, and who passed two hundred and sixty-nine full grown lumbrici before she was relieved. The discharge of these parasites was effected principally by repeated administration of a strong decoction of the Spigelia Marilandica aided by active purgatives.

DOMESTIC SUMMARY.

Ligation of Primitive and External Carotids for Gunshot Wounds of Face; Recovery.—Dr. M. MAHON, Surg. Ohio Vols., relates (*Cincinnati Lancet and Obs.*, April, 1864), a very interesting case of this. The subject of it was a private, 25 years of age, wounded Nov. 25th, at the storming of Mission Ridge. "Ball entered anterior to angle of left lower maxilla fracturing the bone, making a ragged opening nearly one inch long, passing downwards under the tongue, cutting the floor of the mouth, coming out on opposite side to the right and a little below the great cornua of hyoid bone.

"On the evening of November 29th, I was called by the Assistant Surgeon Thirty-Fourth Illinois to see this man, as he was bleeding profusely from wounds. The distance was about one square to the building in which he was lying. On arriving, I found him bleeding from the right side, the blood rushing from his mouth and the point of aperture of escape of ball in neck in a continuous stream, which was bright arterial, and, as was supposed, coming from the sublingual artery. At this time he had lost at least between three and four pints of blood, as the hemorrhage had continued without any intermission for several minutes, and without any attempt having been made to arrest it.

"The patient was placed in the semi-recumbent position, his back well supported by one of the nurses, and it was at once decided to ligate the common carotid of right side. It was utterly impossible for him to lie down; as it was, the blood flowed into his mouth with such rapidity as almost to cause strangulation. The administration of chloroform could not be entertained, and with the assistance of Surgeon Lytle, Thirty-Sixth Illinois, an incision was made from

point of exit of ball down the neck on inside of sterno-mastoid, dividing the superficial structures and deep fascia, working with handle of scalpel, succeeded in exposing the sheath of the vessels with descendens noni nerve, opened the sheath, passed the artery needle armed with ligature from without inwards and secured the vessel just above the omo-hyoid muscle. As soon as the ligature was brought home, all hemorrhage instantly ceased.

"If I had seen the patient sooner, the proper course to have pursued would have been the ligature of the external carotid, but in finding this vessel so much time would have been consumed that it would have been unnecessary to have applied the ligature after the vessel was found. Under the circumstances, no other course was left me, as the danger of his dying was imminent, but ligate at the most available point, at the position that would soonest arrest the hemorrhage, where I could do so with the possibility of saving the man's life, even at the risk of violating one of the established rules of surgery, viz.: 'In wounds of its (external carotid) deep-seated branches, ligate the external carotid.'

"In dividing the tissues not a single arterial or venous branch was cut, which would have rendered the operation very simple were it not for the continual flow of blood through the wound completely deluging and obscuring the parts, but this was remedied to a considerable extent by the judicious use of the sponge by my assistant. The time consumed was extremely short, as the operation, to be at all successful, had to be expeditious to save life. The pressure applied to carotid in the neck preparatory to the operation had very little effect on the hemorrhage, as the difficulty of breathing was very great at best, without compressing the parts about the trachea. During the operation, an assistant had to introduce his finger into the man's mouth to free it from the clots of blood which interfered with respiration. In tightening the ligature, I watched the patient's face to see if any effect would be produced, but none was visible except an expression of relief from the pain incidental to the operation.

"He stood the operation well, never complained till it was over. Whiskey and water were freely administered, and to be continued during the night with beef-tea. He rallied pretty well, considering the vast quantity of blood he had lost; pulse small and rapid; complained of being very weak. We were fearful hemorrhage might occur from opposite side, and he was closely watched during the night.

"Nov. 30th. No further return of hemorrhage during the night; had rested tolerably well; pulse still rapid and weak; very much prostrated. Stimulants to be continued during the day; takes quite large quantities of beef-tea, of which he is very fond.

"Dec. 1st. Slight hemorrhage occurred from wound on left side during night, controlled by liq. ferri persulphatis.

"2d. Hemorrhage occurred again this morning from left side, appeared to come up out of lower maxilla between the ends of fractured bone, as if coming from inferior dental artery. Plugs of lint saturated with liq. ferri persulphatis were inserted with temporary relief from hemorrhage.

"Evening. Hemorrhage again occurred from wound, the patient losing scarcely any blood during this or previous hemorrhages from this side, as he was continually under the supervision of a medical officer. This was again controlled by the iron. Finally, it was resolved that the only course to be pursued in the event of the recurrence of hemorrhage during the night to any alarming extent would be ligation of the external carotid.

"3d. Last night about 12 M. hemorrhage occurred again with considerable force, which necessitated the ligation of the external carotid of left side without any further return of hemorrhage.

"4th. Patient very weak; pulse 100, small and weak; appetite not good; can not take any solid food; has to live on fluids, beef-tea, farina, thin gruel, coffee, tea, and whiskey toddy. Milk punch he cannot bear.

"6th. General condition somewhat improved; more cheerful; appetite better; inclined to doze a good deal; rather drowsy; muscae volitantes floating in the field of vision; cannot sit up in bed without causing a feeling of faintness and dizziness. Pulsation can be felt on supra-orbital ridge of left side, more in right. Face blanched.

"9th. Doing well; pulse 90, tolerably strong, with considerable volume; appetite good. Expresses himself as doing well."

From this time he continued to do well. The ligature from external carotid separated Dec. 11th, that from primitive the following day.

"Jan. 22, 1864. Patient says he feels as well and strong as ever; no muscae volitantes in field of vision. He walks about the city every day when the weather is fine. Union has not taken place in the fractured maxilla. Through a small external opening the ends of the bone can be seen perfectly white and bare, no callus whatever visible.

"28th. This man left Chattanooga on furlough for his home in Indiana, to all appearance as well as ever, except the inconvenience of being unable to masticate his food."

Persulphate of Iron in Hemorrhoids.—Dr. GEO. S. CARTWRIGHT, Ass. Surg. U. S. V., highly extols (*Cincinnati Lancet and Observer*, May, 1864) the efficacy of the persulphate of iron employed as an ointment in the treatment of hemorrhoids. It is especially beneficial, he states, in ulcerated hemorrhoids; or in those whose constitutions are debilitated from diarrhea, long marches, and excessive fatigue of any kind.

Of several cases which he relates illustrative of the advantages of this remedy, we select the following:—

"Major —, U. S. A., of full habit, has been the subject of slight hemorrhoids for several years. For the last twelve months, has been obliged to travel a great part of the time in a rough vehicle. Applied to me December 5th, 1863. On examination found a small tumour, external to the sphincter, about the size of a large pea; when at stool it would protrude to the size of a small walnut, and would with difficulty be returned.

"Treatment.—Lead water freely applied to the part, and R ferri persulphas 3ss., cerate simplex 5j. Rub well together and apply on retiring at night. The effect of the persulphas was almost immediate, relieving pain and cauterizing the part.

"I would state that he had previously used ointment of galls, tannin, opium, etc., with only a temporary relief. The effect of the persulphas is permanent, and in the above case he was able to ride on horseback, or take active exercise, within two weeks after commencing the use of the iron, without the least inconvenience. It is now two months since he first commenced the use of it and has not had any return since."

Dr. C. sometimes employs the ointment with double the proportion of the persulphate used in this case.

Active Constituents of Ergot of Rye.—Mr. W. T. WENZELL, of La Crosse, Wisconsin, has investigated the proximate chemistry of ergot, and he states (*American Journal of Pharmacy*, May, 1864) that he has succeeded in isolating two vegetable nitrogenized alkaloids, the first of which he has provisionally named "ecbolina," and the second "ergotina." Mr. W. gives the following account of the physiological action of the alkaloids.

"The experiments were made by comparison with the powdered drug. Unlike most authors, who believe that ergot has no obvious action on the male, I have come to the conclusion that it has as powerful an influence upon the spinal column of the male as it has upon the female. I find a half grain of *ecbolina* to possess the same therapeutic action as thirty grains of ergot. From either the alkaloid or the powdered ergot in the doses mentioned, the following effects have been experienced upon myself:

"The functions of the brain were excited to a species of intoxication, in which participated the muscular system, causing involuntary contractions of the muscles, soon followed by nausea, loss of appetite, a sense of weight and shooting pains through the head, stiffness and soreness of the muscles of the neck and extremities, a creeping sensation along the course of the spine; finally, a state of general relaxation and debility, soreness of the muscles, particularly those of the extremities, and a gnawing seusion in the stomach, with hunger. From the beginning to the end of the ergotic influence, which lasted about three

hours, the pulse was not materially affected until the stage of debility supervened, when the pulse fell about four beats per minute. On doubling the dose, the only difference observed was, that the state of excitement was of shorter duration, but was followed by a greater amount of debility, greater weakness, with trembling of the extremities and pain through the chest.

"Half a grain of chloride of ecbolina was given to a strong, muscular man, weighing 180 pounds, and in perfect health. He complained of shooting pains in the head, nausea, frequent calls at micturition, pain and tightness across the chest, followed by a reduction of the pulse, depression of the mind, a dull pain with a sense of pressure above the orbits, and general debility.

"Experiments instituted with ergotina in a physiological point of view were less complete, owing to the loss previously mentioned. From the effect produced upon myself, I believe it to be less active than its congener, and although capable of causing some cerebral excitement, and a reduction of the pulse, I did not observe the same specific action upon the spinal column and muscular system."

Mr. W. gave a physician a solution of the chlorate of ecbolina to test its medicinal qualities in uterine hemorrhage and in parturition, and he reports having used it in several cases of uterine hemorrhage, with satisfactory results, but says that, "from the symptoms produced in the doses I had directed him to give, he was compelled to lay it aside, from the energetic and poisonous action it evinced, causing great nausea with distressing vomiting and intense headache. He thinks the ecbolina to be a powerful agent."

The Formation of Crystals of Phosphate of Lime and Magnesia upon the Intestinal Mucous Membrane.—F. A. LARUE, Professor of Legal Medicine in Laval University, Quebec, has communicated to the *Boston Medical and Surgical Journal* (March 24th, 1864) the following curious case:—

"On the 1st of February, 1864, I was requested by the Coroner of Quebec to make a *post-mortem* examination of a woman who had been buried two months and some days, and with regard to whose death there had arisen suspicions of poisoning. The body, although putrefaction had already set in, was, considering the time that had elapsed since death, in a tolerable state of preservation. The skin was of a dark-blue colour, and the epidermis came off on pressure of the finger.

"On opening the stomach I found a few ounces of a darkish fluid, which I put aside for analysis. Passing my fingers over the mucous membrane I felt small, hard bodies, which, when taken off and allowed to dry, had the appearance of small crystals of a yellowish-white colour. Having some months previously examined the body of a person who had been poisoned by arsenic, I was so much struck by the resemblance of the crystals before me with those found on that occasion that I felt almost convinced that I had to deal with another case of arsenical poisoning. I accordingly brought the large and small intestines and liver to Quebec for further examination.

"The day after my arrival I proceeded to test the crystals for arsenic by the method of reduction by sulphuretted hydrogen, &c., but, to my great surprise, the result was purely negative. I then tried, by Reinsch's method, a little of the liquid contained in the stomach; but the copper leaf, after having remained in it an hour, was withdrawn as clear and bright as when it was introduced. Thus convinced of the absence of arsenic, I next proceeded to examine the intestinal tube. The stomach and duodenum did not present, either internally or externally, any trace of inflammation. To appreciate, however, the morbid phenomena presented by the several organs, we must bear in mind how long a time had elapsed since death, and also that putrefaction, while it at times simulates these phenomena, at other times causes them to disappear. The mucous membrane of the remainder of the small and of the large intestines was manifestly very much reddened, but only in patches. I had found an *ascaris lumbricoides* in the stomach. I found another in the duodenum, four in the cæcum, and two in the colon. The whole of the mucous membrane of the small and large intestines was found lined with hundreds and hundreds of small white crystals, similar to those found in the stomach. The largest of these crystals might be about

twice the size of a pin's head, and were found in greater number by far in the large than in the small intestines. Some floated freely in the intestinal liquid, but a great number, having very sharp angles, were so imbedded in the mucous membrane as to be withdrawn with difficulty—sometimes even causing the membrane itself to be torn before they could be extracted. The red patches to which I alluded above always corresponded to those parts where the masses of crystals were found.

"In the cœcum, besides the four worms, I also found three small pieces of bone, each the size of a small nut. One of these bones belonged to the compact, the other to the cancellated portion of bony tissue.

"After this examination I continued my chemical researches, and proceeded to test the crystals for several other poisons, but always with negative results. I then asked myself if possibly I had not to do with one of those rare cases mentioned by toxicologists, where crystals, described as being composed of ammonio-phosphate of magnesia, have been found after death, and are generally considered to be the result of putrefaction, and which so much resembles arsenious acid that Christison, among others, was in two cases only convinced of their real composition by analyzing them. I therefore directed my researches towards this point. The crystals thus far not having appeared sensibly soluble in boiling water, I treated them with dilute nitric acid. They dissolved immediately, with the exception of a white flocculent substance, which floated in the liquid solution and resembled grease. This acid solution was filtered and divided into two parts. The first, acted on by ammonio-nitrate of silver, showed the presence of phosphoric acid; the second, treated by the appropriate tests, showed the presence of lime and magnesia.

"Wishing to make sure of the composition of this white flocculent substance that had not been acted on by nitric acid. I bruised one of the crystals, which was quite unctuous to the touch, and which, submitted to a microscopical examination, presented to my view the fine tables of cholesterine. The crystals were thus composed of phosphate of lime and magnesia, and cholesterine.

"Now were these crystals, as most writers have considered, the result of putrefaction? I think not. It is true that the phosphate of lime and of magnesia is naturally found in milk and other nutritive substances, such as wheat, peas, beans, &c. It is also true that this salt is nearly always found in the feces of healthy individuals. But evidently there is no proportion between the quantity of this salt contained in articles of diet and the thousands of small crystals found in this case.

"From whence, then, did they arise? Believing that I have here found nature at work, and so discovered their origin, I am led to hope that this communication may not be unimportant. Thus I mentioned above that I had found three pieces of bone in the cœcum, each the size of a small nut. One of these pieces, formed of the compact portion, was perfectly intact; the two others, on the contrary, belonging to the cancellated portion, seemed corroded, and we could plainly see a portion of their tissue converted into small white crystals, exactly similar to those found in the intestines. When we consider that all the elements of which these small crystals were formed are found in the bones (with the exception of cholesterine, which was evidently there in a mixed state), we cannot but conclude that they were (in the case before us) but a transformation of the osseous substance itself—a transformation effected by the efforts of digestion.

"With regard to the effect produced on the intestinal mucous membrane by the presence of these small extraneous bodies, which not only acted by contact, but further by their angles embedded in the membrane, there can be no doubt but that enteritis or gastro-enteritis must be the result.

During her illness, which lasted thirty-six hours, the deceased had most of the symptoms of such disease, viz., vomiting, constipation, abdominal pain, &c.

"Then as to its being a case of poisoning, it was impossible to entertain the suspicion, on analyzing the evidence, and considering the development of the symptoms. Moreover, a general analysis of the liquids of the stomach had convinced me of the absence of all metallic substances, with the exception of a certain quantity of iron, which is so frequently found in the stomach accidentally.

"What conclusions are we to draw from these observations? I think we may safely conclude :

"1st. That the presence in the stomach of small pieces of bone gives rise, in certain cases, by the effects of digestion, to the formation of those small insoluble crystals, which up to the present time have been generally attributed to putrefaction, and which by their presence cause enteritis or gastro-enteritis. We would thus have a new cause of enteritis or gastro-enteritis quite unknown, I believe, up to the present day.

"2d. That this cause of sickness is probably more frequent than we suspect, considering that many persons are in the habit, while eating, of craunching bones and swallowing them.

"3d. That an unhealthy state of the stomach or intestines has probably something to do with this transformation, inasmuch as many persons have swallowed bones without experiencing any bad effects. In this case the deceased had eight ascarides lumbricoides, and had suffered some time previously from intense colic.

"4th. That if, after examination of a patient, enteritis should be diagnosed, due to this cause, the treatment would be very simple. By administering to the patient a nitric acid lemonade, both by the mouth and by the rectum, an immediate solution of the crystals would be effected."

Influence of Ozone and some Chemical Agents on Germination and Vegetation.—M. CAREY LEA, Esq., has published (*Am. Journ. of Science and Arts*, May, 1864) some very interesting investigations on this subject. The most curious result obtained by him is that relating to the effect of a highly ozonized atmosphere on the roots of plants. He has also found that organic substances not in the least corrosive, and even entirely neutral, may exercise a powerful poisonous influence upon vegetation, when disseminated in the atmosphere surrounding it.

"(1.) *Influence of Ozone.* The ozone used in the following experiments was generated by the action of sulphuric acid upon chameleon mineral. Two or three grains of chameleon mineral were placed in a small capsule and moistened with oil of vitriol. This, when placed by itself, or with a vessel of water under a bell-glass of about three litres capacity, was found to maintain a highly ozonized atmosphere for five or six days or even longer. But as the presence of vegetation would tend to destroy the ozone rapidly, it was considered expedient to renew the generating mixture every two or three days. In all cases the capsule was placed aside for half an hour or more to allow the red vapours to be thoroughly dissipated before introducing it beneath the bell-glass.

"Two sets of experiments were made: in the first, the water with which the seeds came in contact was made to contain those solid substances which are most essential to vegetation. In the second very pure river water was used. For the first, phosphate of soda, silicate of potash, sulphate of magnesia, nitrate of lime, and sesquichloride of iron were added to water in a proportion such as to be equivalent to three-tenths of one per cent. of solid matter. In order to afford a just term of comparison, two vessels every way similar were filled with this prepared water, were covered with gauze so that the gauze should rest on the surface of the water, and were placed under bell-glasses resting on glass plates. Wheat and maize grains were placed on the gauze and beneath one bell-glass was introduced the ozone-generating mixture.

"2d day. Germination appeared to be more advanced in the vessel containing the ozone. Seeds, however, of like origin, and exposed to the same influences, germinate so irregularly that much importance is not to be ascribed to this.

"3d day. The seeds in ordinary air had overtaken the others. They were already covered with mould, of which no sign appeared on those exposed to ozone.

"4th day. Mouldiness much increased in the one, still none in the other. The rootlets of the plants exposed to ozone begin to exhibit remarkable effects, extending themselves upward instead of downward, and becoming pinkish at the extremities.

"5th day. Ozone plants much behind.

"8th day. The disposition of the roots of the plants exposed to ozone to grow upwards still continues. Of the wheat plants, fully one-half the rootlets have shot directly into the air. The only maize plant which has as yet germinated has sent up a healthy plumula over one inch in length; its three rootlets are all directed upward and away from the water. Nothing in the least similar has taken place in any of the seeds not exposed to the influence of ozone.

"12th day. The experiment was terminated. The average height of the wheat plants not exposed to the ozone was 10 inches: of those exposed, 4 inches. The effect of the ozone in checking the growth of the roots was very remarkable, especially with the wheat plants. In those not exposed to ozone, the roots attained a length equal to about one-fourth the height of the stem. In those exposed to it, the roots after starting almost immediately ceased to grow; the strongest plant attained a height of six inches, and developed six rootlets, averaging only three-sixteenths of an inch in length, while those not exposed to ozone had many roots exceeding two and a half inches. As a whole the roots produced by the plants under the influence of ozone did not exceed one-tenth of those produced in its absence from an equal number of healthy seeds. One curious result of the almost total absence of roots was that the wheat plants were scarcely able to sustain themselves in a vertical position; the greater part of them fell over on one side. The flatness of the grains of maize afforded their plants a better support.

"The influence of ozone over the production of mould was very striking. When seeds were placed in contact with water and with the air under a bell-glass in which a vessel of water stands, which air is of course saturated with moisture, mould began immediately to form, and increased until the surface of the gauze which rested on the water was completely covered. Nothing of the sort was visible in the bell-glass containing an ozonized atmosphere.

"In order the better to observe the influence of ozone upon the mould, the vessel which contained it was transferred to the bell-glass of which the atmosphere was ozonized. In the course of a few hours, the greater part of the mould fell back upon the gauze as a yellowish powder, while two healthy young maize plants appeared unaffected, and continued their development. With a longer exposure, they would of course also have suffered, but their stronger vitality enabled them to resist longer. It was also remarked that the extremities of the leaves of some wheat plants, growing in the same vessel, became yellow. But those wheat plants which had germinated in the ozone atmosphere, although much smaller, were perfectly healthy, and the leaves showed no disposition to die at the ends.

"Pasteur has lately shown that the putrefaction and oxydation of organic bodies is effected to a very large extent by the intervention of the lowest order of vegetable organisms. That in some cases where the germs of these bodies have been carefully excluded, milk for example has been kept in the presence of atmospheric air for a year without alteration; and that when sawdust was inclosed in a flask for a month, the germs having been similarly excluded, the air still contained 16 per cent. of uncombined oxygen.¹ It therefore appears that ozone, while a highly oxidizing agent, may in some cases check putrefaction and oxydation by destroying the intermediate agencies through which these operations are effected; a fact not without interest in connection with the alleged influence of ozone on epidemics.

"The experiments just described were carefully repeated with the substitution of very pure river water, instead of that containing the salts already mentioned. The results obtained were precisely the same. These trials afforded a double set of parallel experiments, similar sets of seeds having been exposed to the action of saline solutions, and to that of river water nearly pure, in both cases with and without the influence of ozone. Clearly, therefore, to nothing but ozone could be ascribed the inverted tendency of the roots, as this always followed its presence, and never appeared in its absence.

"(2.) *Carbonic Acid.* Experiments were made to ascertain the effect of a com-

¹ See Rép. de Chimie Pure, Sep. 1863, p. 479.

plete removal of carbonic acid from the atmosphere surrounding plants. The seeds were placed on gauze strained over a vessel of water, which was set in a dish containing concentrated solution of caustic soda, and the whole was covered with a bell-glass. A similar arrangement was made, exclusive of the caustic alkali, to afford a term of comparison.

"No appreciable difference could be observed. It is probable that seedlings, within the height which they can attain under an ordinary bell-glass, still derive a sufficient supply of carbon from the seed. Be this as it may, the removal of carbonic acid from the atmosphere surrounding them did not interfere with their growth.

"Experiments made with seeds placed in an atmosphere of carbonic acid accorded with results obtained by other observers, as to total prevention of germination under circumstances otherwise favourable. The seeds, however, were found to be not in any way injured, and germinated freely on exposure to the atmosphere.

"It seems probable that in those cases in which germination has been observed to take place in an atmosphere of carbonic acid gas,¹ the exclusion of atmospheric air has not been sufficiently well maintained.

"(3.) *Simple and Compound Ethers.* Seeds were placed on gauze under a bell-glass, as before, and an open narrow-mouthed vial containing a little ether was introduced. Germination was entirely prevented.

"Nitrate of methyl produced a similar effect.

"(4.) *Organic Acids in Solution.* Two organic acids were selected for experiment: oxalic acid as being reducing, non-nitrogenous and sharp; picric acid as oxydating, nitrogenous and bitter. Both were dissolved in water in the proportion of three-tenths of one per cent. Germination was found to be entirely prevented, by the presence of even so small a quantity of these substances. To ascertain if this effect resulted from the acid reaction of the solutions, other solutions were made of oxalate and picrate of ammonia, so proportioned that each solution should contain precisely the same proportion of acids as before, viz., three-tenths of one per cent. In the neutral solution of oxalate, a slow germination followed; in that of picrate, none whatever."

Trichinous Disease.—This newly discovered disease, a full account of which will be found in our preceding No., has been lately observed in the Western part of New York. Dr. L. KROMBEIN gives (*Buffalo Med. and Surg. Journ.*, June, 1864) some cases seen by him in Cheektowaga. "I was invited by my friend Dr. Dingler, of Lancaster, on Sunday, the 15th of May, to see with him two patients whom he had attended for four days. T. F.—, a blacksmith, aged 30 years, and his wife, aged 20 years, were taken ill simultaneously the 29th of April, with stiffness of the limbs and the whole body, bloating of the face, with a slight oedema of the eyelids; soon there followed distinct pains in all the limbs and body, so that they could not bear even the slightest touch. By and by the pains diminished; there set in very laboured respiration and great prostration, combined with profuse sweats. In the commencement of the illness they both had had slight diarrhoea for a few days, and during the whole course of the sickness they suffered greatly from sleeplessness and unquenchable thirst. The woman, who was in the third month of pregnancy, had aborted the 12th, and from that time there was oedematous swelling of both lower extremities. Fever in both patients was very high (pulse 138 in the man, 146 in the woman); but the skin was not hot, but rather cool. I considered at first, like Dr. Dingler, both cases to be 'acute muscular rheumatism,' of a somewhat peculiar character, but during my return home I suddenly remembered to have read some months ago in a German Medical Journal (*Medizinische Chirurgische Monatsshefte*, September number, 1863) of some cases of trichiniasis which resembled very much the two cases above stated, and therefore I immediately wrote to Dr. Dingler that as soon as one of the patients should die, he might send me some particles of muscle for microscopical examination. Two days afterwards he visited me, telling that the man had died yesterday evening (the

¹ Lindley, Int. to Botany, p. 359.

16th of May, at 9 o'clock P. M.). We went there and found the woman dead also (she died the 17th, at 11 o'clock A. M.), and cut from both some particles of the muscles of the thorax, the abdomen, and the thigh. The microscopical examination, in which Dr. Homberger kindly assisted me, disclosed many trichinae, both in the encysted and in the free state.

"I wish to say further, that at the time Dr. Dingler and myself saw the said patients, he told me that he had another family under treatment, having the same disease, residing about two miles distant from the above patients (at Marilla); the wife was a daughter of this same family, who, a short time before her illness, paid a visit, in company with her husband, to her parents. This family consisted of seven members—the man about 60 years of age, the wife 55 years, and five children respectively 24, 22, 18, 14 and 12 years old. Father and mother are dead, children still alive, but Dr. Dingler says they are in a dangerous situation."

The specimen of human muscle taken from one of these cases after death, and also the sausages eaten of were examined by Dr. J. R. Lothrop and Prof. Geo. Hadley, under the microscope, and the trichina found in both in great numbers. In the muscle the parasite was free, in the sausage, encysted.

Threatened Abortion Treated by Chloroform.—Dr. SHUMARD stated to the St. Louis Medical Society "that some time ago he was called to see a lady, two and a half months advanced in pregnancy, who was suffering from very severe pains in the back, accompanied by hemorrhage evidently uterine. He prescribed opium and sugar of lead to check the bleeding, which, however, had no effect. The pains becoming much worse, he gave her chloroform by inhalation, and very soon all pain and hemorrhage ceased. On the next morning she was somewhat debilitated, but had no return of the pain. This was six weeks ago, and there has been no trouble since. The lady had miscarried three or four times before, about the same period.—*St. Louis Med. and Surg. Journ.*, May and June, 1864.

JEFFERSON MEDICAL COLLEGE—SESSION 1864-65.

The Session will commence on Monday, the 10th of October, with a General Introductory Lecture by one of the Professors. The regular lectures will begin the day after. The Session will terminate on the last day of February. Great attention will be paid to instruction in the departments of Medicine and Surgery which have more intimate relations to military and naval service.

ROBERT M. HUSTON, M. D.,	{ Emeritus Professor of Materia Medica and General Therapeutics.
CHARLES D. MEIGS, M. D.,	{ Emeritus Professor of Obstetrics and Diseases of Women and Children.

Institutes of Medicine,	By Prof. ROBLEY DUNGLISON, M. D.
General, Descriptive and Surgical Anatomy,	" JOSEPH PANCOAST, M. D.
Institutes and Practice of Surgery,	" SAMUEL D. GROSS, M. D.
Materia Medica and General Therapeutics,	" THOMAS D. MITCHELL, M. D.
Practice of Medicine,	" S. HENRY DICKSON, M. D.
Obstetrics and Diseases of Women and Children,	" ELLERSLIE WALLACE, M. D.
Chemistry,	" B. HOWARD RAND, M. D.

Clinics will be held regularly in September; and every Wednesday and Saturday in October, and, during the course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the Class. During the year ending March the first, 1863, a large number of medical and surgical cases were treated, and numerous surgical operations performed; among them many of the most important. The lectures are so arranged as to permit the student to attend the clinics of the Pennsylvania Hospital, and the Philadelphia Hospital.

On and after the 1st of October, the dissecting-rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

F E E S.

Matriculation, which is paid only once,	\$ 5
To each Member of the Faculty \$15,	105
Graduation,	30
	ROBLEY DUNGLISON, M. D., <i>Dean of the Faculty.</i>

HARVARD UNIVERSITY.

MASSACHUSETTS MEDICAL COLLEGE.

The annual course of Medical Lectures of Harvard University will commence at the Massachusetts Medical College, in North Grove Street, Boston, on the first Wednesday of November, 1864. The regular course will be as follows:—

Obstetrics and Med. Jurisprudence, by Professor D. HUMPHREYS STORER, M. D.
Morbid Anatomy, "
Clinical Medicine, "
Anatomy and Physiology, "
Theory and Practice of Medicine, "
Surgery, "
Chemistry, "
Materia Medica "

Demonstrator, DAVID W. CHEEVER, M. D.

Clinical, Medical, and Surgical Instruction will be given at the Massachusetts General Hospital, with Surgical Operations.

Collateral special medical instruction will also be given at the Hospital and elsewhere by Lectures and otherwise, by Drs. SHATTUCK, ABBOT, and ELLIS.

Abundant material is afforded for the study of Practical Anatomy. The Room devoted to this department is open day and evening, and lighted by gas.

Fees for the Lectures, \$85; Matriculation fee, \$3; Graduation fee, \$20.

Good Board can be obtained at \$4.00 to \$6.00 per week. Boarding places provided on application to the Janitor at the College.

Students are requested, upon coming to Boston, to call upon the Dean.

D. HUMPHREYS STORER, *Dean of the Faculty.*

July, 1864.

No. 132 Tremont Street, Boston.

[July and Oct.]

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.

ANNOUNCEMENT FOR THE NINETY-NINTH SESSION—(1864-65).

WILLIAM GIBSON, M. D.,	Emeritus Professor of Surgery.
GEORGE B. WOOD, M. D.,	Emeritus Professor of Theory and Practice of Medicine.
SAMUEL JACKSON, M. D.,	Emeritus Professor of Institutes of Medicine.
HUGH L. HODGE, M. D.,	{ Emeritus Professor of Obstetrics and the Diseases of Women and Children.
JOSEPH CARSON, M. D.,	Professor of Materia Medica and Pharmacy.
ROBERT E. ROGERS, M. D.,	Professor of Chemistry.
JOSEPH LEIDY, M. D.,	Professor of Anatomy.
H. H. SMITH, M. D.,	Professor of Surgery.
FRANCIS G. SMITH, M. D.,	Professor of Institutes of Medicine.
R. A. F. PENROSE, M. D.,	Professor of Obstetrics and the Diseases of Women and Children.
ALFRED STILLÉ, M. D.,	Professor of Theory and Practice of Medicine.
D. HAYES AGNEW, M. D.,	Demonstrator of Anatomy, and Assistant Lecturer on Clinical Surgery.

The Lectures of the Session (1864-65) will begin on the second Monday of October and close on the first of March.

One Introductory will be delivered to the Course.

Clinical Instruction is given throughout the Session, in the Medical Hall, by the Professors, and at the Hospitals. At the Philadelphia Hospital, containing 571 beds, instruction is free.

Military Surgery and Hygiene will be fully taught by the appropriate chairs.

The Dissecting Rooms, under the superintendence of the Professor of Anatomy and the Demonstrator, are open throughout the year, except in July and August.

The room for Operative Surgery and the Application of Bandages, &c., is open throughout the Session, under the supervision of the Professor of Surgery.

Fees for the Lectures (each Professor \$15)	:	:	:	:	\$105
Matriculation Fee (paid once only)	.	.	.	.	5
Graduation Fee	.	.	.	.	30

R. E. ROGERS, M. D., *Dean of the Medical Faculty,
University Building.*

SAMUEL PRICE, *Janitor, University Building.*

P. S.—Board may be had at from \$2 50 to \$6 per week.

UNIVERSITY OF MICHIGAN.

MEDICAL DEPARTMENT.

Rev ERASTUS O. HAVEN, D. D., President.

ZINA PITCHER, M. D., Professor Emeritus of the Institutes of Medicine and Obstetrics.

ABRAM SAGER, M. D., Professor of Obstetrics and Diseases of Women and Children.

SILAS H. DOUGLASS, M. D., Professor of Chemistry, Pharmacy, and Toxicology.

MOSES GUNN, M. D., Professor of Civil and Military Surgery.

ALONZO B. PALMER, M. D., Professor of the Theory and Practice of Medicine and Pathology.

CORYDON L. FORD, M. D., Professor of Anatomy.

Hon. THOMAS M. COOLEY, Professor of Medical Jurisprudence.

SAMUEL G. ARMOR, M. D., Professor of the Institutes of Medicine and Materia Medica.

WILLIAM LIWITT, M. D., Demonstrator of Anatomy.

ALBERT B. PRESCOTT,

HENRY S. CHEEVER, B. A., } Assistants in the Chemical Department.

DEXTER V. DEAN, M. A., }

The Lectures of the term will commence on the first day of October, and continue until the last week in March next.

No fees for instruction; a fee of fifteen dollars for incidental expenses for first course students, and five dollars for any subsequent course. A fee of three dollars, also, for admission to the dissecting-rooms.

Further information given by

Dr. S. H. DOUGLASS,
Dean of the Faculty.

BELLEVUE HOSPITAL MEDICAL COLLEGE—CITY OF
NEW YORK.

SESSION FOR 1864-65.

The Trustees and Faculty announce with much gratification the renewed evidence of success afforded by the session of 1863-64. The experience of three sessions has furnished ample proof of the importance of the new movement in behalf of medical education inaugurated by this College.

FACULTY.

ISAAC E. TAYLOR, M. D., *President.*

AUSTIN FLINT, JR., M. D., *Secretary.*

JAMES R. WOOD, M. D., Professor of Operative Surgery and Surgical Pathology.

FRANK H. HAMILTON, M. D., Professor of Military Surgery, Fractures, and Dislocations.

LEWIS A. SAYRE, M. D., Professor of Orthopedic Surgery.

ALEXANDER B. MOTT, M. D., Professor of Surgical Anatomy.

STEPHEN SMITH, M. D., Professor of the Principles of Surgery.

ISAAC E. TAYLOR, M. D., } Professors of Obstetrics and the Diseases of Women
GEORGE T. ELLIOT, M. D., } and Children.

B. FORDYCE BARKER, M. D., }

BENJAMIN W. McCREADY, M. D., Professor of Materia Medica and Therapeutics.

TIMOTHY CHILDS, M. D., Professor of Descriptive and Comparative Anatomy.

AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine.

R. OGDEN DOREMUS, M. D., Professor of Chemistry and Toxicology.

AUSTIN FLINT, JR., M. D., Professor of Physiology and Microscopical Anatomy.

HENRY D. NOYES, M. D., Demonstrator of Anatomy.

GEORGE H. HUMPHREYS, M. D., Assistant Demonstrator of Anatomy.

N. R. MOSELEY, M. D., Prosecutor to Chair of Surgical Anatomy.

A. W. WILKINSON, M. D., Assistant to Chair of Chemistry and Toxicology.

PRELIMINARY TERM.

The preliminary term will commence on Wednesday, September 14, 1864, and continue to the beginning of the regular term, viz., for four weeks.

Instruction during this term will consist of didactic courses on special subjects of interest and practical importance, together with daily clinical lectures. The college lectures during this term are given exclusively by members of the Faculty. Attendance during this term is not required, but students are earnestly solicited to attend; it being designed to make this term not merely a nominal, but an actual extension of the period of instruction.

REGULAR TERM.

The regular term will commence on Wednesday, October 12, 1864, and end early in March, 1865.

During the whole of the session the student will have the opportunity of attending at least two clinical hospital lectures daily. In addition to these, four didactic lectures are given on every week-day except Saturday, in the college building within the hospital grounds. The didactic lectures are so arranged as not to interfere with hospital attendance. Ample time is allowed for accompanying the visiting physicians, surgeons, and obstetricians of the hospital, attending clinical lectures, witnessing surgical and obstetrical operations, autopsies, etc., without compromising any of the courses of didactic instruction, the latter being as complete in this institution as in colleges not connected with hospitals. Clinical and demonstrative teaching constituting the great feature of this College, the arrangements are such as to render the immense resources of the hospitals available to the fullest extent.

All the lectures in this College are given either in the Hospital or in the College building within the Hospital grounds.

The Bellevue Hospital receives annually from ten to twelve thousand patients. The annual number of births in the Hospital is about five hundred. The Blackwell's Island Hospital contains usually about one thousand patients, a large proportion being affected with chronic diseases. This Hospital contains always several hundred cases of syphilis. In addition to the vast field of clinical instruction afforded by these hospitals, the student may avail himself of the other institutions under the government of the Commissioners of Public Charities and Correction, together with the varied resources for practical instruction contained in the great metropolis.

The facilities for the study of practical anatomy are unlimited. Anatomical material is supplied free of expense.

The fees for tickets to all the lectures, during the Preliminary and Regular Terms,

BELLEVUE HOSPITAL MEDICAL COLLEGE—Continued.

amount to \$105; tickets for one or any number of the seven departments of instruction may be taken out separately. The Matriculation fee is \$5. The Demonstrator's ticket is \$5. Graduation fee is \$30. No other fees are required. The Hospital ticket is gratuitous, after matriculation. Students who have attended two full courses in other accredited* schools, receive all the tickets for \$50, exclusive of the matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited school, will be required to matriculate only. Graduates of other accredited schools, after three years, are required to matriculate only; prior to three years, they receive a general ticket for \$50.

Payment of fees is required in all cases, and tickets must be taken out at the commencement of the session. There are no exceptions to this rule.

Twenty-two resident Physicians and Surgeons are appointed annually, after an examination and recommendation by the Medical Board of the Hospital. They receive a salary sufficient for their support.

Students, on arriving in the city, are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor, Mr. Edwin A. Ware, who will take pains to aid them in securing comfortable accommodations, without delay.

For circulars of the College, giving fuller information, etc., address the Secretary of the Faculty, Professor Austin Flint, Jr., 257 Fourth Avenue, New York.

* Eclectic and Homeopathic schools are not accredited.

FISKE MEDICAL PRIZE QUESTIONS.

The Trustees of the Fiske Fund, at the Annual Meeting of the Rhode Island Medical Society, held at Providence, June 1, 1864, announced that the premium of One Hundred Dollars, offered by them, in 1863, for the best dissertation on the following subject:—

“GUNSHOT WOUNDS, PARTICULARLY THOSE CAUSED BY NEWLY INVENTED MISSILES,” has been awarded to the author of the dissertation bearing the motto—

“*Arma virumque cano.*”

And upon breaking the seal of the accompanying packet, they learned that the successful competitor was Alexander R. Becker, M. D., of Providence, Rhode Island.

They offer the following subjects for 1865:—

1. WHAT EVIDENCE IS THERE THAT INFLAMMATORY AND FEBRILE DISEASES HAVE UNDERGONE ANY GENERAL CHANGE OF TYPE?

2. THE EFFECTS OF CLIMATE IN AMERICA ON TUBERCULOUS DISEASE.

For the best dissertation on either of these subjects they offer a premium of One Hundred Dollars.

Every competitor for a premium is expected to conform to the following regulations, viz:—

To forward to the Secretary of the Fiske Fund Trustees, on or before the first day of May, 1865, free of all expense, a copy of his dissertation, with a motto written thereupon, and also accompanying a sealed packet, having the same motto inscribed upon the outside, and his name and place of residence within.

Previously to receiving the premium awarded, the author of the successful dissertation must transfer to the Trustees all his right, title, and interest in and to the same, for the use, benefit, and behoof of the Fiske Fund.

Letters accompanying the unsuccessful dissertations will be destroyed by the Trustees, unopened, and the dissertations may be procured by their respective authors, if application be made therefor within three months.

HENRY E. TURNER, M. D., Newport.
SYLVANUS CLAPP, M. D., North Providence,
OTIS BULLOCK, M. D., Warren, } Trustees.

S. AUG. ARNOLD, M. D., Providence,
Secretary of the Fiske Fund Trustees.

THE
AMERICAN JOURNAL
OF THE MEDICAL SCIENCES
FOR OCTOBER 1864.

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TO READERS AND CORRESPONDENTS.

All articles intended for the original department of this Journal must be communicated to it *exclusively*. The simultaneous transmission of the same article to several journals, would seem to be indicative of the spirit of advertising rather than of a desire to advance our science, and places the editor in a false position, leading to the suspicion that he presents to his readers, as original, articles which cannot be strictly so considered.

The following works have been received:—

A System of Surgery. By JAMES MILLER, F.R.S.E., F.R.C.S.E., Surgeon in ordinary to the Queen for Scotland; Professor of Surgery in the University of Edinburgh, &c. &c. &c. Edinburgh, 1864. (From the Author.)

On Poisoning by Diseased Pork. Being an Essay on Trichinosis, or Flesh-worm Disease: its Prevention and Cure. By JULIUS ALTHAUS, M. D., &c. &c. London, 1864. (From the Author.)

Notes on the Climate of the Swiss Alps and of some of their Health Resorts and Spas. By HERMANN WEBER, M. D., Physician to the German Hospital, London. Second Paper. Dublin, 1864. (From the Author.)

Medical Communications, with the Proceedings of the Seventy-Second Annual Convention of the Connecticut Medical Society, held in New Haven, May 25 and 26, 1864. New Haven, 1864.

Military Medical and Surgical Essays, prepared for the United States Sanitary Commission. Edited by WILLIAM A. HAMMOND, M.D., Surg. Gen. U. S. A. Philadelphia: J. B. Lippincott & Co., 1864. (From the Publishers.)

First Outlines of a Dictionary of the Solubilities of Chemical Substances. By FRANK H. STORER. One volume in three parts. Part III. Cambridge. Sever & Francis, 1864. (From the Author.)

A Treatise on Gonorrhœa and Syphilis. By SILAS DURKEE, M. D., Consulting Surgeon to Boston City Hospital, &c. &c. &c. Second edition, revised and enlarged. With eight coloured illustrations. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

The Sanitary Commission of the United States Army: a Succinct Narrative of its Works and Purposes. New York, 1864.

A Woman's Example, and a Nation's Work. A Tribute to Florence Nightingale. Second edition. London, 1864.

Recent Progress in Surgery. The Annual Address delivered before the Massachusetts Medical Society, May 25, 1864. By J. MASON WARREN, M. D. Boston, 1864. (From the Author.)

The Relation of the Medical Profession to Science. An Address delivered before the Graduating Class of the Department of Medicine and Surgery of the University of Michigan, March 30, 1864. By Rev. E. O. HAVEN, D. D. Ann Arbor, 1864.

Glycogenic Function of the Liver. By HOWARD TOWNSEND, M. D., Prof. Phys. and Mat. Med. Albany Med. Coll. Albany, 1864. (From the Author.)

Address before the Medical Society of the County of Albany, Nov. 10, 1863. By HOWARD TOWNSEND, M. D., Retiring President. Albany, 1864. (From the Author.)

The Western Sanitary Commission: A Sketch of its Origin, History, Labours for the Sick and Wounded of the Western Armies, and Aid given to Freedmen and Union Refugees, with Incidents of Hospital Life. St. Louis, 1864.

Van der Kolk's Pathology and Therapeutics of Insanity. Translated by J. WORKMAN, M. D.

Essays on Infant Therapeutics. To which are added Observations on Ergot, History of the Origin of the Use of Mercury in Inflammatory Complaints, &c. By JOHN B. BECK, M. D., &c. &c. Third edition, enlarged and revised. New York: W. Wood & Co., 1864. (From the Publishers.)

Memoranda on Poisons. By THOMAS H. TANNER, M. D., &c. From the last London edition. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

The Physician's Visiting List, Diary, and Book of Engagements for 1865. Philadelphia: Lindsay & Blakiston. (From the Publishers.)

The Physician's Dose and Symptom Book, containing the Doses and Uses of all the Principal Articles of the *Materia Medica* and *Official Preparations*. By JOSEPH H. WYNES, M. D. Fourth edition. Philadelphia: Lindsay & Blakiston, 1864. (From the Publishers.)

The following Journals have been received in exchange:—

Revue de Thérapentique Médico-Chirurgicale. Par A. MARTIN-LAUZER, M.D., &c. Nos. 11, 12, 13, 14, 15, 16, 17, 1864.

The British and Foreign Medico-Chirurgical Review. July, 1864.

The Half Yearly Abstract of the Medical Sciences. Edited by W. H. RANKING, M. D., and C. B. RADCLIFFE, M. D. January—June, 1864.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, M. D., and JAMES BRAITHWAITE, M. D. January—June, 1864.

Medical Times and Gazette. June, July, August, September, 1864.

The Royal London Ophthalmic Hospital Reports and Journal of Ophthalmic Medicine and Surgery. Edited by J. C. WORDSWORTH, J. W. HULKE, and J. HUTCHINSON. Vol. IV. Pt. II.

British Medical Journal. Nos. 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 1864.

The Medical Mirror. May, June, July, 1864.

The Ophthalmic Review. Edited by J. Z. LAURENCE and THOMAS WINDSOR. July, 1864.

- The Glasgow Medical Journal. July, 1864.
- The Dublin Quarterly Journal of Medical Science. May, 1864.
- Dublin Medical Press. June, July, August, 1864.
- Edinburgh Medical Journal. June, July, August, 1864.
- Medical and Surgical Review. [Australasian.] Edited by JAMES KEENE. February, March, 1864.
- Canada Medical Journal. Edited by G. E. FENWICK, M. D., and F. W. CAMPBELL, M. D. July, August, September, 1864.
- The Indian Annals of Medical Science. No. XVII. 1864.
- The Boston Medical and Surgical Journal. Edited by S. L. ABBOT, M. D., and J. C. WHITE, M. D. July, August, September, 1864.
- The Cincinnati Lancet and Observer. Edited by E. B. STEVENS, M. D., and J. A. MURPHY, M. D. July, August, September, 1864.
- The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. July, 1864.
- American Medical Times. July, August, September, 1864.
- The St. Louis Medical and Surgical Journal. Edited by M. L. LINTON, M. D., and F. W. WHITE, M. D. July, August, 1864.
- Buffalo Medical and Surgical Journal. Edited by J. F. MINER, M. D. July, August, September, 1864.
- Ohio Medical and Surgical Journal. Edited by the Professors of Starling Medical College, Ohio. July, 1864.
- The Chicago Medical Journal. Edited by Drs. MILLER and INGALS. Aug., 1864.
- The Sanitary Commission Bulletin. April, May, June, July, August, Sept., 1864.
- The Sanitary Reporter. July, August, September, 1864.
- The Pacific Medical and Surgical Journal. Edited by V. J. FOURGEAUD. M. D. May, June, July, 1864.
- San Francisco Medical Press. Edited by HENRY GIBBONS, M. D., and R. B. COLE, M. D. July, 1864.
- The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTER, JR., Prof. Pharmacy in Philadelphia College of Pharmacy. July, September, 1864.
- The American Journal of Science and Arts. Edited by Profs. B. SILLIMAN, B. SILLIMAN, JR., and J. D. DANA. July, September, 1864.
- The American Druggists' Circular. July, August, 1864.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to Messrs. Trübner & Co., Booksellers, No. 60 Paternoster Row, London, E. C.; or M. Hector Bossange, Lib. quai Voltaire,

No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor may be addressed to his residence, 1525 Locust Street.

ALL REMITTANCES OF MONEY, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

To secure insertion, all advertisements should be received by the 20th of the previous month.

C O N T E N T S
OF THE
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ART. I.—*On Injuries of the Spine, including Concussion of the Spinal Cord.* Illustrated with Cases. By JOHN A. LIDELL, M. D., Surgeon U. S. Vols., in charge of Stanton General Hospital, Washington, D. C.

INJURIES of the spinal column, with solution of its continuity, whether partial or complete, are very dangerous to life. This arises mainly from the important offices (functions) performed by the large nervous cord, which traverses the spinal canal from occiput to sacrum, and which, too, is apt to be injured by any lesion of its osseous case produced by violence. It is also highly probable that, at least in some instances, the ganglia of the sympathetic nervous system and their connecting cords, being located along the spine on either side of it, are involved in the injury to the spine itself, and on that account assist materially in producing a fatal result. And when we reflect upon the important relations which subsist between the sympathetic nerves and the viscera of the abdomen and the pelvis, especially the intestines, the kidneys, and the urinary bladder, we can readily understand why the destruction of a sympathetic ganglion may produce most disastrous consequences. But clinical observation, entirely aside from any speculation founded upon physiological and pathological knowledge, has abundantly attested the exceeding gravity of all mechanical lesions of the spine. For example, complete vertebral fracture occurs not unfrequently, and yet the number of recoveries from it on record is very small. Vertebral dislocation uncomplicated with fracture is of very rare occurrence, but the recoveries therefrom are much rarer still.

Fracture of the spinal column is, for the most part, dangerous to life in proportion as it occasions either *compression* or *laceration*, or leads to *inflammation of the spinal cord*. It may produce compression in two different ways. In the first place the whole thickness of the spinal mar-

row may be subjected to severe pressure, directly by the displacement of the fragments of the broken spine. Thus, a vertebra may be fractured horizontally through its body, and the principal ligaments being at the same time ruptured, the upper fragment of it, together with the superincumbent portion of the spinal column, may be thrust so far forward as to narrow the spinal canal very much at the place of fracture, and to subject the spinal cord to great compression or even laceration at the seat of displacement, producing thereby paralysis of all the parts supplied with spinal nerves issuing below the seat of fracture. In the second place, vertebral fracture with little or no displacement may produce compression of the spinal cord, indirectly, by extravasation of blood from the ruptured vessels of the theca vertebralis or of the cord. For example, a man may be violently thrown on the ground on his back, in wrestling. After recovering from the immediate effects of the shock he may be able to get home with but little assistance. Some hours afterwards it may be noticed that he is losing the use of his lower extremities, and the paralysis may go on increasing hour by hour until complete paraplegia is established, or, indeed, until death is produced. On making an autopsy it may be found that one or more of the inferior cervical or the superior dorsal vertebrae have been fractured with but little displacement, that the spinal dura mater has been lacerated, that the meningo-rachidian arteries and veins have been ruptured, and that they have poured their contents into the thecal cavity so as to come into relation with the spinal cord and compress it through most of its extent. The writer is able to present an interesting case of this sort, which occurred in the practice of Dr. John J. Crane, of New York city, to whom he is indebted for the notes of it.

CASE I. Mr. S., by profession an actor, about 50 years of age, sustained a violent injury of his spine, while wrestling on a Sunday afternoon. He was unable to rise after being thrown, and was laid upon a bench by those around. He was afterwards placed in a carriage and supported in a semi-recumbent position by some of his friends, and in that way conveyed to his home. Dr. Crane saw him first about 9 o'clock that evening. He was then unable to move his lower extremities, exhibiting all the symptoms of spinal injury, so far as they were concerned. His urine, however, was passed voluntarily, the bladder and abdominal muscles being not paralyzed. The upper extremities, also, were not paralyzed.

The next morning (Monday) the paraplegia had reached a higher point, and it was necessary to draw off his urine with a catheter. After this the paraplegia, continued to go on steadily, travelling up the trunk, involving the upper extremities, involving, also, all the muscles of respiration except the diaphragm, and finally reaching the origin of the phrenic nerves, he suddenly ceased to breathe. His bowels moved only once, and then by enema on Tuesday morning. He complained of pain only in the lower part of the neck, and exhibited signs of severe suffering when his head was moved. His mind was clear to the last moment. He died on Wednesday night, something more than three days after the injury. The autopsy disclosed a fracture passing through the fifth, sixth, and seventh cervical

vertebræ. There was not much displacement, certainly not enough to press on the spinal cord in any way, and not enough to be detected by external examination. The theca vertebralis was lacerated at the place of fracture, accompanied with the effusion of much blood into the spinal canal, compressing the spinal cord. It was evident that the paraplegia had crept up the body slowly, accordingly as the blood was effused into the thecal cavity, and that death had been produced by compression of the spinal cord from this cause. The theca vertebralis was lacerated to the extent of about one third of its circumference, but not any more than that. The blood was extravasated from the vessels of the cord itself (*anteriae spinales*). The writer assisted at the autopsy, and thus became familiar with the case.

Again, even if the spinal dura mater be not lacerated, a quantity of blood may be extravasated from the ruptured thecal vessels between the bony wall of the spinal canal, and the theca itself, for its anatomical relations are such that but little force is required to separate it from its osseous case, and in this way the spinal cord may be compressed in a manner analogous to what happens to the brain when blood is extravasated from the middle meningeal artery, between the cranium and the cephalic dura mater.

With regard to *laceration* of the spinal cord, it should be stated that the cord may be partially, or even completely divided by a displaced fragment of the broken spine; but it is evident that, in order for such a result to be produced, the amount of displacement must be very great. In cases of *gun-shot fracture* of the spine, however, it happens not unfrequently that the bullet passes completely through the back-bone, dividing the spinal marrow either wholly or in part, in its course. The symptoms produced during life by division of the medulla spinalis are almost identical with those produced by compression, affecting the same tissue of the cord, in the same locality, and, therefore, it will generally be impossible to diagnosticate this lesion of the medulla during life except a wound of the soft parts be also present, of a character permitting exploration with the finger, and the detection of the division by the sense of touch. For such cases there is never any hope of recovery; for division of the medulla spinalis, whether partial or total, and in whatever way produced, always proves fatal sooner or later, according to the extent and locality of the division.

But cases of *vertebral fracture*, accompanied with *paraplegia*, do sometimes get well, provided the spinal cord is neither lacerated nor permanently compressed. A reference will be made to some cases of this sort in another part of this paper. There is good reason to believe that cases of vertebral fracture *not unfrequently recover*, provided that there is neither sufficient displacement of the fragments, nor sufficient extravasation of blood from the ruptured thecal vessels to produce any compression of the spinal cord, and it is not doubted that some of the cases of the so-called "strained back," produced by being thrown from a horse, by falling down stairs, and by violent blows on the back, belong to this category. But at the same time

it should not be forgotten that any fracture extending to the vertebral canal, even if it be only a simple fissure, is very dangerous to life.

Concerning Inflammation of the Spinal Marrow as a Sequel to Injury of the Back-bone.—While clinical observation has shown that inflammation of the brain and its meninges is exceedingly apt to follow injury of the cranium, it has also shown that inflammation of the medulla spinalis produced by injury of the vertebral column is of very rare occurrence. Indeed, but a comparative small number of cases of traumatic inflammation of the spinal cord are on record. Now this marked difference in susceptibility to attack from traumatic inflammation appears to be due in part to the large amount of fluid (cerebro-spinal) which intervenes between the spinal cord and its fibrous sheath (*dura mater*), and in which the cord is suspended as it were—whereby the shock of injury is diffused over a considerable space, instead of being concentrated at a single spot in accordance with a well-known law of mechanical philosophy—and in part to the much lower degree of vascularity of the spinal prolongation of the brain than of the brain itself.

The symptoms of traumatic inflammation of the medulla spinalis vary considerably according to the activity of the inflammatory process. For example, in one of Stromeyer's cases a bullet had entered between the arches of the third and fourth lumbar vertebrae, and there had become fixed. At first there were no severe symptoms, but suddenly violent pains came on with cramp in the extremities, having similarity to tetanus, and accompanied by delirium. The outer wound was dilated and the bullet easily extracted with the help of an elevator. The finger could then be introduced into the spinal canal; but the patient sank rapidly, and the autopsy showed inflammation of the spinal cord. (*Statham's Stromeyer*, p. 38.) In another case, related by the same surgeon, a bullet entering laterally had severely bruised the third and fourth cervical vertebrae, and had not been extracted; this was succeeded by inflammation of the spinal cord and brain; there was at first palsy of the injured side, followed by incomplete paralysis of all the limbs, and terminating fatally by coma. (*Op. cit.*, p. 38.) Mr. Alexander Shaw relates the case of a man who was brought to the Middlesex Hospital, having a dislocation of the left femur, complicated with extensive injury of the pelvis. A few days afterwards he was attacked with *acute pain in the back* and exhibited other symptoms of inflammation. He died, and at the autopsy it was found that besides a lesion of the left acetabulum there was a fissure of the sacrum which terminated at the vertebral canal of that bone. "Flakes of lymph, and increased vascularity in the membranes and among the roots of the cæda equina, denoted that acute inflammation had been set up by the fissure in the interior of the canal." (*Holmes' System of Surgery*, vol. ii. p. 224.)

Charles Bell narrates an interesting case of inflammation of the spinal

cord, produced by vertebral fracture, of which the following is a condensed account :—

A plasterer, aged 25, injured his back severely in the lower part of the dorsal region with fracture, by falling from a height of forty feet, and was taken to the Middlesex Hospital. . There was swelling over the lower dorsal vertebræ, and he complained of great pain in that locality. He was perfectly sensible, and had no paralysis whatever of the lower extremities.

He passed a restless night, and the next day continued to be in great pain, and also had persistent vomiting.

On the second day he had delirium ; pulse frequent and not full ; skin hot ; feces and urine passed involuntarily.

On the third day, his restlessness and delirium continued, and he threw himself out of bed ; pulse 136 and weak.

On the fifth day, he sank into a state of insensibility, and died about an hour afterwards.

At the *autopsy*, the spinous process and the *body* of the eleventh dorsal vertebra were found to be fractured, but the spinal cord did not appear to be injured. A thick greenish-coloured pus lay between the theca vertebralis and the cord in the cavity of the spinal arachnoid. There was an effusion of serum between the membranes of the brain. (*Surgical Observations*, p. 138 et seq.)

In another case, reported by the same writer, a partial subluxation between the last cervical and the first dorsal vertebra was followed, on the eighth day, by general convulsive movements, accompanying inflammation of the spinal marrow, and the patient died a week afterwards of exhaustion, having not been paralyzed at any time. The autopsy showed a little subarachnoidean effusion of serum in the cranium, and an abundant deposit of pus within the theca vertebralis, lying between it and the spinal cord. (*Surgical Observations*, p. 146 et seq.)

The symptoms of acute traumatic inflammation of the medulla spinalis, deduced from the foregoing examples of it, are intense pain located in the spine, and aggravated by pressure or motion, more or less symptomatic fever, great restlessness, convulsive movements, delirium, and death, generally preceded by coma, with muscular paralysis, either partial or complete, of the bladder and of the extremities. The symptoms of chronic inflammation of the spinal cord, by which is meant an inflammation slow in progress and of considerable duration, are pain pretty constant in character, and referred to some part of the back-bone, liable to be increased by exercise, on which occasions tenderness under pressure at the seat of pain is especially manifest, there being but little or no febrile movement at the same time ; disordered sensations, such as a benumbed feeling, formications and darting pains more or less extensively distributed through the parts supplied with nerves, which issue from the spinal marrow at or below the inflamed portion of it ; muscular spasms, or occasional convulsive move-

ments denoted by involuntary twitchings and startings of the extremities; the patient has also a feeling of weariness and muscular debility especially in the lower extremities, which induces him to keep the recumbent posture most of the time. It has been supposed that the disordered sensations mentioned above denote an inflammatory excitation of the sensitive tract, and the convulsive movements an inflammatory excitation of the motor tract of the spinal cord.

Concerning Dislocation of the Spine.—Complete dislocation of the vertebræ, entirely unaccompanied with fracture, occurs but rarely; indeed, it is so seldom met with that some surgeons have been led to doubt whether it has ever been seen. However, there are a few well-authenticated cases of it on record, and this fact settles definitely the disputed question. The following example of it is condensed from the history of a case furnished by Mr. Lawrence: A robust young man, aged 22, while carrying a heavy load on the back of his head and neck, slipped in descending some steps, and fell suddenly on the buttocks without letting go his hold of the burthen. He was immediately deprived of sensibility and voluntary mobility in all the parts below the neck, and the movements of respiration were apparently performed by the diaphragm alone. He died on the morning of the fourth day afterwards, with symptoms of asphyxia and exhaustion.

Autopsy.—“No displacement or inequality could be discovered by external examination, when the body was laid on the face. After cutting away the muscles from the back of the spine, the cartilaginous surfaces of the superior articular processes of the fifth cervical vertebra came into view. They were exposed in consequence of the inferior processes of the fourth vertebra having been completely dislocated forwards, and remaining fixed in their unnatural position. The yellow ligaments connecting the laminae of the two vertebrae (*ligamenta subflava*) were torn through, and the bifid apex of the fourth spinous process lay in close contact with the basis of the fifth. On the front of the column an unusual projection was observed, but the anterior longitudinal ligamentous expansion was entire. The body of the fourth was completely detached from that of the fifth vertebra, the connecting fibro-cartilage being torn through, and the body of the former projecting by its whole depth in front of the latter. In consequence of this displacement, the antero posterior diameter of the vertebral canal was lessened about one-third.” (*Medico-Chirurgical Transactions*, vol. xiii., Part 2, p. 394 to p. 397. 1827.)

The vertebræ, in general, are interlocked with each other so closely that dislocation without fracture cannot occur unless the vertebral ligaments, such as the intervertebral substance, the *ligamenta subflava*, the supra and inter-spinous, the inter-transverse, and the capsular, are extensively lacerated.

Again, the greater flexibility of the spinal column in the cervical region predisposes to the occurrence of dislocation at that part in preference to either the dorsal or lumbar region, a circumstance which was originally pointed out by Mr. Lawrence.

Like vertebral fracture, vertebral dislocation destroys life, by producing compression, or laceration, or inflammation of the medulla spinalis, and the remarks upon these points already made in connection with vertebral fracture are, for the most part, applicable to vertebral dislocation.

On Gunshot Fracture of the Spine.—Mechanical injuries of the spinal column in civil life are mostly occasioned by strains, falls, and heavy blows on the back. But to these common causes of spinal lesions of a traumatic character there must be added, on behalf of the military life, especially in time of war, the wounds produced by firearms. When gunshot projectiles occasion fracture or any other lesion of the spinal column, they do it by penetrating the overlaying soft parts, and impinging directly against the bone, and thus it happens that gunshot fractures of the spine are generally compound, while those produced by falls, blows, etc., are generally simple in character. It is possible that the back-bone may be extensively fractured by a spent cannon ball or fragment of shell, without solution in the continuity of the skin, an accident which, in one instance, has come under the writer's observation with respect to the thigh-bone, but he has not yet known an instance of it occurring in the spine. Again, gunshot fracture of the spine, besides being compound, is generally attended with a greater amount of comminution than vertebral fracture produced by other forms of violence; for a musket ball, especially a conical one, usually breaks any bone which it fairly strikes into several or even many fragments. Also, laceration of the spinal dura mater (*theca vertebralis*) is more apt to be present in cases of vertebral fracture occasioned by firearms than in those occurring from other causes; and thus it happens, not unfrequently, that in cases where musket balls penetrate the back-bone deeply, or pass completely through it, a quantity of the cerebro-spinal fluid escapes through the hole made by the bullet, and continues to flow away afterwards as fast as it can be secreted. In this way, a very untoward complication is often added to gunshot fracture of the spine—a complication which hastens the fatal result in bad cases, and may positively determine a fatal result in certain cases wherein the spinal marrow itself is not injured, and the amount of displacement and comminution are not insuperable in the way of recovery. Again, musket balls passing through the spinal column not unfrequently cause a division of the spinal cord, either partial or complete. This laceration of nerve tissue may be effected directly by the bullet itself, or indirectly by forcing a detached fragment of bone violently across the cord.

The general symptoms of gunshot fracture of the spine are not essentially different from those which are present in other forms of that injury, and they are referable mainly to paralysis, either partial or complete (but commonly the latter), of all the muscular apparatus supplied with spinal nerves given off at or below the seat of fracture. In some cases, wherein the amount of displacement of bone and injury of the spinal marrow are

small, and the differential diagnosis might otherwise be difficult, it can be definitely settled by exploring the wound with the finger, when fracture, if present, will be readily detected. Digital exploration of gunshot wounds involving bone should never be neglected, and least of all in case of injury to the spine by firearms; for in them the highest interests of the patient and the reputation of the surgeon are deeply involved in the prognosis which he may give.

CASES II and III. A few cases of gunshot fracture of the vertebral column came under the writer's notice at the battle of Fair Oaks. All of them had been produced by musket balls, and exhibited paraplegia. In two of them the place of fracture was the lower part of the cervical region. In both of these latter cases, the upper extremities and all the other organs, and parts to which the spinal nerves are distributed having their origin at or below the place of fracture, were completely paralyzed both as to sensation and as to voluntary motion. The bladder was deprived of contractility, and no urine was voided without the aid of a catheter. The muscular wall of the abdomen was relaxed and flaccid. The apparatus by which the movements of respiration are performed was paralyzed, except the diaphragm alone. This muscle continued to act because the phrenic nerves have their origin above the place of injury to the spinal cord, and they were therefore intact. The costal parietes of the thorax were drawn inwards, as they are at the end of the movement of normal expiration. The contraction of the antero-posterior and transverse diameters of the chest appeared to be directly occasioned by the elasticity of the thoracic walls; the *intercostals*, the *levatores costarum*, and the *inspiratory muscles* generally, being at the same time paralyzed, and thus rendered impotent to oppose it. These two patients died asphyxiated, the one on the third and the other on the fourth day after injury. From the imperfect performance of the respiratory movements, a considerable portion of the pulmonary tissue became useless for the purpose of aerating the blood, and this fluid being unable to pass beyond the pulmonary capillaries until it is sufficiently aerated, it began to stagnate in the vascular tissue of the lungs (passive congestion), and this stasis of the blood continued gradually to increase until asphyxia and death were finally produced. In both cases the intellect was clear, and there were no head symptoms whatever, until the stupor of asphyxia advancing to a fatal termination made its appearance.

CASE IV. A robust man, aged about 30, while attempting to drive a peddler's wagon having a very high seat, on which he was sitting at the time, into a carriage-house having a rather low door, hit his head with great violence against a beam at the top of the doorway, which crushed him down into the seat. His head was bent forward and also low down for the purpose of escaping the beam at the time. He was immediately carried into the house in a helpless condition, and two hours afterwards the writer saw him. He then lay on his back, with the neck flexed forward, and he appeared to be in dread lest an attempt to move his head should be made. His lower extremities, trunk, and upper extremities were completely paralyzed both as to sensation and motion. His intellect was clear, and he expressed himself as free from suffering. He was breathing by the diaphragm alone, for all the other muscles of respiration were paralyzed. On examination of the spine fracture with marked displace-

ment was readily detected between the fifth and seventh cervical vertebrae. Treatment: He was catheterized, and directed to be placed on a soft bed; a milk diet was allowed. The attendants were especially enjoined not to attempt to raise or turn his head to give him food, or drink, or for any other purpose. It was also noticed that he had partial erection of the penis. The accident happened in the afternoon.

The next morning it was observed that sensibility had partially returned to the arms, but the paralysis as to motion was still complete. In other respects, his condition was unchanged. The urine was drawn off with a catheter in the morning and again in the evening.

On the following day he did not exhibit any signs of improvement. The urine had a strong ammoniacal odour although the catheter was employed both in the morning and again in the evening. The bowels had not moved. The abdomen was flaccid, and swollen from the accumulation of gases in the intestines. A terebinthinate enema was administered.

On the third morning he was much worse. His respiration was difficult, the movements being much increased in frequency, and accompanied with some moist rales. His lips were becoming blue. He was tympanitic. He sank rapidly, and died asphyxiated seventy hours after the accident.

A *post-mortem* examination could not be obtained.

CASE V. A healthy middle-aged farmer fell backwards from a load of hay in such a manner as to strike the ground with the back of his head and neck, the whole weight of his body being superimposed. He immediately lost the use of all his limbs. In that state he was picked up and conveyed to his home, where the writer saw him a few hours afterwards in consultation with Jenks S. Sprague, M. D., late President of the New York State Medical Society. He was completely paralyzed both as to sensation and voluntary motion up to the root of his neck, at which place fracture of the spine with a good deal of displacement was detected. He lay on his back breathing with the diaphragm alone.

The symptoms and progress of this case bear so strong a resemblance to the last that it is not worth while to repeat them. He died asphyxiated on the fourth day.

An *autopsy* was not allowed.

It is the belief of the writer that patients who have suffered a vertebral fracture in the lower part of the cervical region, associated with either complete division or severe and persistent compression of the whole thickness of the spinal cord at the same place, never survive the injury longer than a week, that death almost always takes place from asphyxia, and that it generally occurs about the fourth day after injury. But, as we descend from the cervical to the dorsal region, it is found that, other things being equal, the patient lives the longer the further the place of injury to the spinal marrow happens to be below the cervical region, because, under these circumstances, the respiratory movements become more fully performed, and the tendency to stasis of blood in the lungs becomes less in the same ratio. If, however, the place of injury happens to be in the lumbar region, the patient survives still longer, the nature of the injury being the same, because in this case the movements of respiration are not at all interfered with. For the purpose of illustration, it may be stated that in

a large majority of the cases of paraplegia accompanying vertebral fracture, admitted to our military general hospitals, the lesion is located in either the lumbar or inferior dorsal region, and this appears to be satisfactorily accounted for on the supposition that the cases of cervical and superior dorsal lesions do not, as a general rule, live long enough to reach a general hospital.

Gunshot fracture of the spinal column is apt to be complicated with gunshot injury of other important parts. For example, in cases of gunshot fracture of the dorsal region, it frequently happens that the bullet also wounds some of the organs contained in the thorax, and in cases of gunshot fracture of the lumbar region, some of the abdominal viscera are often wounded. The following case affords a fair illustration of lumbar fracture produced by small arms.

CASE VI. Private John W. Smith, Company "K," 116th Pennsylvania Volunteers, aged 19, of good constitution, received a very severe wound in the lumbar region from firearms, in action at Salem Church, Virginia, May 30, 1864.

He was admitted to Stanton General Hospital 4th June, 1864. The wound had been inflicted by a conical musket ball which entered about two inches to the left of the third lumbar vertebra, and passing obliquely forwards, upwards, and to the right, fractured the transverse process of the third lumbar vertebra, and passed through the bodies of the third and second lumbar vertebrae. It had not been extracted, and its situation could not be discovered. He has partial paralysis of the lower extremities. He has still the power to move his legs somewhat, and the sensibility in them is not entirely destroyed. He has diarrhoea with involuntary evacuations, and inability to void his urine. His general condition is feeble and unfavourable. Treatment : Simple dressings to wound, catheterization. Pil. opii, gr. j every two hours. Ferri et potass. tart., port-wine, and a nourishing diet. Directed special care to be taken for the prevention of bed sores.

June 8. Patient failing ; diarrhoea has stopped ; has some symptoms of peritonitis ; the ischuria renalis continues ; same treatment continued with fomentations to the abdomen.

12th. Patient continues to fail ; the paralysis has increased, and the paraplegia is now complete ; instead of retention of urine he now has enuresis ; treatment unchanged.

14th. He sank, and died.

Autopsy.—On removing the lumbar and the two lower dorsal vertebrae, the bullet was found to have traversed as already stated. Besides fracturing the spine, it had passed through the right kidney, and was found lying loose near the spinal column. The peritoneum was inflamed throughout its whole extent. The intestines were in a state of approaching gangrene (inflammatory). The right kidney was mostly disintegrated. The bladder was highly inflamed, and filled with a bloody pus.

Ward No. 3. Acting Ass't Surg. C. R. Nelden, U. S. Army.

This patient died of traumatic peritonitis fifteen days after he was wounded, and, considering the injury of the right kidney, it seems wonderful that he lived so long.

Diagnosis.—The relations of the spinal column with the other portions of the body are important, and, at the same time, the spinal column is not so deeply covered with the soft parts but that the diagnosis in cases of vertebral fracture can generally be made without much difficulty. The attitude of the patient, and the sudden occurrence of paraplegia in connection with a severe injury of the back, will at once direct the surgeon's attention to the spine, and, indeed, the height in the trunk to which the paralysis extends will, in most instances, give him accurate information with regard to the particular part of the spinal cord which has sustained an injury. If now the clothing be cut off from the patient, and the spine carefully examined, more or less deformity, occasioned by the fragments having been driven past each other in opposite directions at the place of fracture, will in most cases be detected. In some cases the amount of displacement is so great that the deformity resulting from it is seen at a glance. In other cases it is so small as to require a close inspection of the spinous process and every other portion of the injured vertebrae that may be accessible to external examination to settle the question of fracture; and, if the amount of displacement be very small, the diagnosis may be obscured by some doubt. But this happens comparatively seldom, for an amount of violence sufficient to fracture a bone so large and so much strengthened by ligamentous tissue as a vertebra is, in a large majority of instances, also sufficient to produce an amount of displacement appreciable by a surgeon. In cases of gunshot fracture of the spinal column the exploration of the wound with the finger almost always suffices to establish the diagnosis beyond doubt.

Prognosis.—As already stated, the mortality among cases of vertebral fracture in general is very great, and the prognosis is, therefore, always bad. But when the *spinous process* alone is broken off and this lesion is not accompanied with fracture of the lamina or any other part of the vertebra, there does not appear to be so much danger to life. At least I have seen a considerable number of cases belonging to this category, and I cannot now call to mind a single patient having this lesion that did not make a good recovery." Stromeyer, also, says that, during the Schleswig-Holstein war, "Injuries of the spinal processes frequently occurred without serious consequences." (*Statham's Stromeyer*, p. 39.) This immunity of vertebral fracture, when confined to the spinous process, from a fatal termination can be satisfactorily accounted for by the fact that, in such a case, there is no solution in the continuity of the spinal column and there is no injury of the spinal marrow.

The gravity of the prognosis is influenced very much by the age of the patient, by the amount of injury sustained by the spinal cord, and by the particular part of the cord on which the injury has been inflicted. For example, death occurs most speedily and certainly when the cervical part is involved, and the patient survives the longest, and occasionally even gets well, when the lesion is located in the lumbar or the dorsal region. Again,

if the spinal marrow happens to be divided completely or lacerated extensively in any part of its course, there is no hope whatever of recovery; and if the whole thickness of the marrow is compressed *severely* and *persistently*, the patient likewise cannot get well. But if the amount of compression happens to be small and transient in duration, the patient may recover, and live many years afterwards. Mr. Alexander Shaw relates two cases of severe injury of the back, with fracture in the dorsal region, both of which got well, and were examined by him many years subsequently.¹ The first of them was that of a patient who, in his youth, suffered a fracture of the spine between the eighth and tenth dorsal vertebrae. After a long time and much suffering he recovered, with paralysis remaining, and was seen by Mr. Shaw, in perfect health otherwise, more than twelve years after the accident. (*Holmes' System of Surgery*, vol. ii. p. 226.) The other case was a man who received a fracture of the spine, and became paraplegic while yet young, who shortly afterwards recovered sensation and the power of voluntary motion in his limbs so as to be able to pursue an active occupation, who, after a period of seventeen years, had a return of the paralysis, and, lingering for five years in that condition, died. (*Op. cit.*, p. 228.) At the *autopsy* it was found that at the place of fracture (the fifth dorsal vertebra) "for two inches the substance of the cord had disappeared, and, in exchange for it, there was a confused structure composed of arachnoid membrane and pia mater, converted into a loose cellular texture, not unlike that of the axilla on its outside, but more firm and cord-like within. This fine fibrous and membranous tissue adhered lightly to the internal surface of the theca, which had not undergone any perceptible change, except that of being thrown into folds, and it connected the upper sound portion of the cord to the lower. Each end of these portions was soft and diffuent, but not distinguished by any marked vascularity." "It was distinctly observed that there was an absence of adventitious strutures, the ordinary products of inflammation. The morbid change appeared to be in the nature of *softening*, or of a disintegration of the substance of the spinal cord from fault of nutrition." (*Op. cit.*, vol. ii. p. 231.) The pathological appearances revealed by the autopsy have been quoted at length on account of their exceeding rarity and intensely interesting character.

With regard to the influence of *age* upon the prognosis, it may be stated in a general way that after the middle period of life vertebral fracture is always fatal. The instances of recovery from that lesion belong to the period of youth and early manhood. This is doubtless to be attributed

¹ Dr. LENTE also reports two cases of fracture of the spine, both of which recovered. Vide *American Journal of the Medical Sciences*, vol. xxxiv., October, 1857, p. 361 et seq.

They were both males, and were engaged in useful occupations a couple of years subsequent to injury.

mainly to the elasticity and resiliency which belong to the spinal column in the early periods of life. Indeed, vertebral fracture with structural lesion of the spinal marrow almost never happens in childhood, a fact which can be satisfactorily accounted for by the elasticity and flexibility of the bones in general at this time of life. But increasing years bring with them increasing brittleness of the osseous tissue, and the consequence is that a degree of violence which in youth would produce vertebral fracture with but a small amount of displacement of the fragments and but little injury to the spinal cord, in age produces a much greater amount of displacement and a much higher degree of injury to the spinal marrow.

Gunshot fractures of the spinal column appear, in general, to be more rapidly fatal than those not occasioned by firearms. This may be attributed, firstly, to the fact that gunshot fractures of the spine are almost always compound, while other fractures of the spine are generally simple; secondly, to the fact that laceration of the theca vertebralis and escape of the cerebro-spinal fluid is more liable to happen in cases of gunshot injury; and, thirdly, to the fact that the same bullet that fractures the spine is very apt to inflict serious injury upon other organs. Leaving out of the calculation such fractures as involve the spinous process alone, the writer has never seen a case of gunshot fracture of a vertebra get well, and he might add that he has never seen life prolonged for a month after the infliction of that injury. For example: ten cases of vertebral fracture produced by musket balls, not including those wherein a spinous or transverse process only was broken off, have been brought to Stanton General Hospital, all of which have terminated fatally. One of them lived twenty-six days, another twenty-one days, another twenty, another nineteen, another sixteen, another fifteen, another thirteen, another eleven, and two others survived the injury but five days. In all of them the fracture was located in either the lumbar or the dorsal region, and in several of them the injury was complicated with a gunshot wound of other important organs.

In the British army, during the Crimean war, there occurred *ten cases* of gunshot wounds with fracture of vertebrae, but without lesion of the spinal cord, of which *six died* and *four recovered* so far as to be invalidated; there also occurred *twenty-two cases* of gunshot wounds with fracture of the vertebrae and lesion of the spinal cord, *all of which died*.

The author of the *Surgical History of the British Army* during that period says: "All the fractures of the vertebrae were promptly fatal, except two among the officers and two among the men, all of which were either fractures of the transverse processes in the neck, or of the spinous process only. Even where the spinal cord, apparently, was not primarily injured, inflammation of it or its membranes was sometimes set up and quickly proved fatal." (*Medical and Surgical History of the British Army during the Crimean War*, pp. 336, 337.) As with us, the partial

or incomplete fractures of the spinal column afforded a large percentage of recoveries, but all the complete fractures proved rapidly fatal.

Mr. Bampfield, while speaking of injuries of the vertebrae, states that "the fatality is not so great when fractures have been occasioned by musket balls" (*vide An Essay on the Spine*, p. 168), but from the facts and reasons already presented the writer feels confident that Mr. Bampfield is mistaken.

On Certain Injuries which cannot be Classified under the head of Fracture of the Spine.—Other injuries are inflicted upon the osseous case which incloses the spinal cord by musket balls, besides a solution of its continuity sufficiently extensive to be fairly entitled to the appellation of fracture of the spine.

These injuries are *firstly, contusions*; a bullet may only hit a vertebra and thereby bruise it severely without comminuting or even fissuring it perceptibly to the unaided eye. A case of this sort, taken from Stromeyer, has already been alluded to while discussing traumatic inflammation of the medulla spinalis.

Secondly. A bullet not unfrequently passes through the posterior part of the cervical or the lumbar region from side to side, fracturing one or more spinous processes without injuring any other part of the vertebrae. Sometimes concussion of the spinal cord accompanies this injury, but in a very large majority of these cases the cord suffers in no way whatever. These cases almost invariably get well without difficulty.

Thirdly. The bullet occasionally penetrates the body of a vertebra and becomes imbedded in it, of which injury the following case is an interesting example:—

CASE VII. A robust young soldier named Thomas Durning, aged 19, belonging to the First Michigan Sharpshooters, was wounded in the loins severely, 24th June, by a minie ball, and brought to Stanton General Hospital July 1st. On examination it was found that the bullet had entered on the left side, over the posterior part of the crest of the ilium, and having passed upwards and inwards remained unextracted. He did not have any paralysis of the bladder or of the extremities. On the 4th he was violently attacked with tetanus, of which he died on the morning of the 5th.

Autopsy 10 hours after death. The bullet was found *lodged in the body of the third lumbar vertebra* on the left side. On exploring its track it was found to have *contused the anterior crural nerve* at its origin and the lower end of the left kidney. There was limited peritonitis, and a small collection of pus, say a drachm, about where the ball impinged against the peritoneum, at lower end of kidney. The intestines were not injured by the missile. There was nothing worthy of note in the appearance of the other viscera. Ward 7, Actg. Asst. Surg. W. B. Dick, U. S. A.

Fourthly. The bullet may penetrate as far as the vertebral canal and lodge therein. The next two cases, the notes of which have been kindly

furnished by Asst. Surgeon Wm. Thompson, U. S. Army, in charge of Douglas Hospital, afford examples of this lesion.

CASE VIII. Elias Hedding, aged 40, private Co. E, 149th Pa. Vols., wounded in Virginia on May 8th, was admitted to Douglas General Hospital May 18th, late at night, and died in a few hours. No record of his case exists, but at the autopsy the bladder was found over-distended, and his helpless appearance before death indicated paraplegia. The ball, a minie, entered the left side over the inferior ribs, and passing obliquely forwards, downwards, and inwards between the spinous process of the third and fourth lumbar vertebrae, fractured those processes to some extent, together with the laminae of these two vertebrae, and penetrated the spinal canal, where it lodged.

CASE IX. William H. Chambers, age 20, private Co. H, 14th New York Heavy Artillery, was struck by a bullet in May, which entered at the spine of the right scapula, passed inwards, and lodged in the spinal canal. He was admitted to Douglas Hospital on the 20th, and died on the 27th. There was complete paraplegia and paralysis of both bladder and rectum. The bullet fractured the fifth rib, and caused an abscess between the lung and the thoracic parietes at this point, which contained about six ounces of pus. No general pleuritis nor pneumonia was discovered. The bullet carried away the posterior and inferior part of the eighth dorsal vertebra (right side), together with the inferior articular process of that vertebra. It also fissured the lamina and tore off a part of the spinous process of the same vertebra. It also carried away the superior articular process of the ninth dorsal and lodged in the spinal canal.

In each of these cases the bullet fractured divers portions of sundry vertebrae, but did not destroy the continuity of the spine considered as a whole. Both of them, strictly speaking, are cases of partial or incomplete fracture of the vertebral column.

Treatment of Fracture of the Spine.—Surgeons generally agree that no effort should be made to set a broken spine. It is known that a large amount of force would be required to reduce the displacement of the fragments. And it is believed that the employment of so much force would be quite as likely to inflict additional injury upon the medulla spinalis as to remove the compression already existing; indeed, it is thought that the efforts at reduction might readily convert a case of compression into one of laceration or complete division of the cord. It is also believed that, if reduction of the displacement should be effected, it would return again, because the relations of the back-bone are such as not to permit the application of splints, or of any other apparatus which could successfully keep the fragments in apposition. There is no doubt, then, that the dictates of surgical prudence and humanity both require that no attempt should be made to reduce a vertebral fracture.

But should any effort be made to relieve the spinal cord by cutting down upon the spine itself, and extracting depressed fragments of bone? This

operation, which was practised with great benefit by Louis in 1762, in France, has not unfrequently been repeated since that time, in both Europe and America; but, upon the whole, with so little success as to lead most surgeons to discourage the operation. After considerable investigation, the writer *has failed to find one completely successful case on record*. There are, however, several instances recorded in which a very gratifying degree of success was achieved. *Vide* that of Louis already referred to, and in American Surgery that of Dr. Alban G. Smith, reported in the *North American Medical and Surgical Journal*, vol. viii., 1829, p. 94 et seq.; that of Dr. H. A. Potter, reported in the *New York Journal of Medicine and the Coll. Sciences*, vol. iv., March, 1845, p. 174 et seq.; and that of Dr. H. A. Potter, reported in the *American Medical Times*, January 10, 1863, pp. 17 and 18.

It would appear from this that the operation of trephining the spine, although in general unsuccessful, should not be altogether discarded. The surgeon should certainly not cast it out of his consideration, when he is calling to mind the treatment which a special case of fractured spine may require.

Again, the treatment of vertebral fracture should be conducted with a view to prolong the patient's life. Care should be taken at every step that the injury of the spinal cord be not increased by the employment of any unnecessary violence in handling or moving the patient. After the receipt of the injury, the coat, waistcoat, and shirt should not be removed by pulling them off over his head, as generally practised; for, by taking them off in this way, there is great risk of increasing the displacement of the fragments, thereby increasing the lesion of the cord; but the clothing should be carefully cut off from him with a scissors or a sharp knife. In all cases of paraplegia produced by violence, the safest way will be to conduct the treatment on the hypothesis that the spine is fractured, until a contrary diagnosis is clearly established. For the purpose of removing the patient to his home or to the hospital, he should be carefully placed in a recumbent position upon a litter, or a door removed from its hinges. If the fracture be located in the cervical or the superior dorsal region, his head should at the same time be carefully steadied by pillows or cushions placed on each side of it. At the hospital, he should be placed upon a water-bed, or, in its absence, upon a soft mattress, for treatment, with a view to lessen the tendency to the formation of bed-sores over the sacrum and the hips, a very strong tendency to which will be present on account of the diminished vitality of the paralyzed tissues. Bed-sores in such patients do not heal, and generally expedite the fatal result considerably. Special attention should always be paid to the bladder. From paralysis of that organ, the patient cannot pass any urine of his own volition. The catheter should therefore be regularly introduced at suitable intervals twice a day, and the urine drawn off. The bowels, which are apt to become confined sooner or

later, will also demand attention. As a general rule, they should be moved by enemata ; and if there is much tendency to the accumulation of flatus in the intestines, the enema should be stimulating in character. It will also be advisable to administer occasionally a cathartic by the mouth, for the purpose of clearing out the upper bowel. Particular attention should be paid to cleanliness. The surgeon should every day see for himself that the genital organs, the nates, the hips, and the sacral region are perfectly clean and dry, and that there are no dark-red spots indicative of the beginning of bed-sores. The attendants should be instructed not to disturb the broken spine while changing the patient's underclothing. These garments should be open through their whole length, so that they may be readily put on and removed again without raising him up. At the same time, the patient should be carefully supported by a diet at once nourishing and of easy assimilation. The bitter tonics, combined with iron, are also useful. If a tendency to the occurrence of inflammation of the spinal cord or its membranes is developed, it should be combated locally by leeching, followed by the persistent application of ice, and by the internal administration of a sufficient quantity of opium at suitable intervals to secure the quietude of the patient. This plan of treatment appears to be well adapted to prolong life in cases where recovery is not expected, and to promote recovery in cases which are not entirely hopeless.

On Concussion of the Spinal Cord.—It happens not unfrequently that a paralysis, more or less complete, especially of the lower extremities, is produced by injury of the spine, without the occurrence of fracture, or, indeed, of any perceptible lesion of the spinal column or of the spinal marrow. The term concussion of the spinal cord has been employed to designate these cases, because of the analogy they are supposed to bear to concussion of the brain. In both alike, a more or less complete arrest of special function is produced, without any visible injury to the nerve tissue. *Cerebral concussion* produces a state of more or less profound unconsciousness, and *spinal concussion* occasions a more or less complete *paralysis* of the parts supplied with spinal nerves, the filaments of which either pass through or are given off from the concussed tract. Perhaps the following case, extracted from the *Medical and Surgical History of the British Army in the Crimea*, p. 337 to p. 338, will afford a clearer view of what is understood by concussion of the spinal cord.

CASE X. “Private William Hamilton, 18th Regiment, was struck by a piece of shell, which broke his bayonet in its sheath, tore away his pouch, exploding the ammunition, and wounded him severely.

“On admission at the regimental hospital, there was a wound about one and a half inches long situated to the right side of the fourth lumbar vertebra. The finger could be passed from it across the spine towards the left side, and a probe passed readily in that direction to the depth of eight

inches at least, and seemed to indicate that a foreign body was lodged in that situation.

"The hips did not correspond in shape, and the lower extremities were paraplegic. Much swelling and inflammation of the parts followed, accompanied by fever. The wound commenced to discharge purulent matter on the second day, when the more urgent symptoms subsided, and the case progressed favorably till the 13th day, when increased inflammation and suppuration, with persistent paraplegia, appeared to demand more energetic treatment than had yet been adopted. An incision was made to permit the extraction of the portion of bayonet supposed to have lodged deep in the hip. No foreign body was, however, found, but the pain was relieved, and free vent was now given for the escape of matter. The muscles of the left thigh sloughed very extensively, the patient became jaundiced, and died on the 21st day worn out.

"On *post-mortem* examination, the muscular structures implicated were found to be sphacelated, and a considerable amount of sanguous pus between their layers. The posterior portion of the right ilium was greatly shattered, and the sacro-iliac synchondrosis was completely separated. The abdominal organs were uninjured.

"*No fracture of the vertebra existed, nor were any appearances found in the spinal column sufficient to account for the persistent paraplegia.*"

The Italics are not in the original. Since concussion of the spine is *per se* but seldom fatal, and therefore the opportunities of investigating its pathological anatomy are much restricted, it has seemed to the writer that no apology would be necessary for quoting the foregoing case in detail.

Surgical authors describe an ecchymosed condition of the brain, and also of the spinal cord, as present in certain cases of concussion affecting these organs. For example, Bampfield says:—

"Concussions of the spinal marrow sometimes occasion extravasation of blood, or bloody serum, within or without the theca vertebralis; and, in addition to the usual loss of sensation and volition in the extremities, the respiration shall be disordered. These cases are frequently fatal."

"Dissection has disclosed extravasation of blood, in one or more clots or patches, between the spinal canal and the spinal dura mater, or in the cellular texture investing that membrane. All the membranes of the spinal cord have been found either separately torn up or ruptured, or the whole have been lacerated, and have allowed the medulla spinalis to protrude like a hernia, or to escape through the rent in a mashed condition." (*Bampfield's Prize Essay on the Spine*, p. 175.)

It cannot be doubted that, in at least some instances, this ecchymosis, this extravasation of blood beneath the visceral arachnoid membrane into the meshes of the pia mater (connective tissue), denotes a genuine *contusion* of the brain or spinal cord, as the case may be; and that in this way a positive pathological lesion, perceptible to the unaided vision, is super-added to the concussion. These cases of *concussion*, complicated with *contusion* of the nerve tissue, when the cerebrum happens to be the part involved, exhibit a marked tendency to the occurrence of meningo-cerebral inflammation and cerebral abscess.

The following case strongly corroborates this statement:—

CASE XI. Gunshot Wound of Scalp; Death twenty-four days afterwards from Cerebral Abscess.—Col. Farnham, of the New York City Fire Zouaves, was wounded at the battle of Manassas, July 21, 1861, by a spent ball, which hit his head, and knocked him off his horse. He was picked up insensible. The wound was small in size, superficial in character, and situated on the left side of the head, three inches above the meatus auditorius. It healed without any difficulty. The principal symptoms in his case, until near the close, were referable to concussion and irritation of the brain. He died on the evening of August 14th, twenty-four days subsequent to the infliction of the injury. It was thought that he would recover, until about four days before death. He was partially paralyzed on the right side (hemiplegia) toward the last. He was comatose in the last moments.

At the *autopsy*, made August 15th, by Dr. Goulay, U. S. Army, we found that the external wound was superficial, that the skull was not injured, that there was copious subarachnoidian effusion, that there was an unusual quantity of yellow-coloured serum in the ventricles, and that there was an abscess of the cerebrum situated directly beneath the wound of the scalp. This abscess was about the size of an English walnut, superficial in situation, and surrounded by softened cerebral tissue. The visceral and parietal arachnoid over the abscess were glued together, to some extent, by adhesive inflammation, so that, in endeavouring to turn back the dura mater while making the autopsy, though it was carefully done, the abscess was torn open. *There were also traces of an extravasation of blood, three or four weeks old, in the sulci of the brain, beneath the visceral arachnoid membrane over the seat of the abscess, and likewise at the anterior extremity of the left cerebral hemisphere. There was a flattened clot of blood, black in colour, and apparently three or four weeks old, in the fossa at the base of the middle lobe of the left cerebral hemisphere.* The dura mater, in relation with it, was somewhat thickened, roughened, and opacified.

Contusion is much more likely to happen to the brain than to the spinal cord, because, in the *first place*, the surface of the brain is in close relation with its firm unyielding osseous case, while the spinal cord is separated from its osseous envelope by a considerable space, occupied by the cerebro-spinal fluid; and because, in the *second place*, the brain is a more vascular organ than the spinal cord; or, in other words, the brain is much more abundantly supplied with bloodvessels, liable to be ruptured by any contusing force, than the spinal cord.

But contusion of either of these great nervous centres is not attended by a train of morbid phenomena peculiar to itself, and therefore it cannot be diagnosed with perfect certainty during life. It is apparent at a glance that it cannot be produced unless concussion is at the same time occasioned, and for that reason contusion should be regarded as a possible complication in any case of severe concussion. Perhaps its presence may be reasonably suspected whenever concussion shows a particularly strong tendency to run into inflammation. But at the outset the surgeon cannot

decide whether the case is complicated with contusion, for the strength of the tendency to inflammation of the nerve-tissue and its inverting membranes cannot be estimated till the after progress of the case affords a fitting opportunity.

Concussion of the spinal cord has attracted a good deal of attention among the civil surgeons, and the consequence of it is, that most of the systematic works on surgery, of recent date, contain more or less complete accounts of it. (Vide Erichsen's *Science and Art of Surgery*, pp. 296, 297, American edition; also Dr. Gross' *System of Surgery*, vol. ii. p. 247; and Holmes' *System of Surgery*, vol. ii. p. 238 *et seq.*)

But although cases of concussion of the spinal cord are not unfrequently met with in military practice also, this pathological condition has not excited nearly so much attention among the writers on military surgery. For example, Sir George Ballingall dismisses the whole subject with a single brief paragraph. He says: "Wounds and injuries of the spine are in many respects allied to those of the cranium. They occasion transitory concussion, liable to end, like that of the brain, in inflammatory action." (*Outlines of Military Surgery*, p. 319.) Macleod makes no mention whatever of concussion of the spinal marrow in his *Notes on the Surgery of the War in the Crimea*, and Williamson is equally reticent on the subject in his *Notes on the Wounded from the Mutiny in India*. Even so acute an observer as Hennen neglects to call the attention of his readers to conenussion of the spinal cord, unless he alludes to it in the following paragraph: "From severe blows or bruises on the abdomen very serious injuries are inflicted without the solution of external continuity, and even instant death is no unfrequent consequence. Dissection in some instances explains these cases; but in others we are left entirely in the dark, and until we can affix a more appropriate name we may apply the term concussion to them, as we do to the unknown cause of death in injuries of the head. Nor is the analogy so loose as might at first sight be supposed, for independently of the lesions of the organs contained in the two lower cavities, the *spinal marrow may be affected in a way beyond the reach of our senses to discover*:" (*Principles of Military Surgery*, pp. 447, 448.). The Italics have been introduced. The surgical historian of the *British Army in the Crimea* limits his discussion of the snbject to the following brief remarks: "The functions of the spinal cord were occasionally destroyed temporarily, or even permanently, where no discoverable lesion existed, probably in somewhat the same way as concussion of the brain produces insensibility." (*Medical and Surgical History of the British Army in the Crimea*, vol. ii. pp. 337, 338.) Mr. Guthrie gives an extended account of concussion of the brain in his *Commentaries upon the Surgery of War*; but makes no mention whatever of concussion of the spinal cord.

The following cases have occurred under the writer's observation in military practice:—

CASE XII. *Concussion of the Spine occasioned by the Explosion of a Shell.*—Private William B. Morse, Co. A, 40th New York Vol., 20 years old, always healthy, light hair, blue eyes, nervo-sanguine temperament, above the average in point of intelligence, and a terrible stammerer, was admitted to Stanton General Hospital, June 15, 1863, from the Field Hospital of the Army of the Potomac, at Potomac Creek. He said that he had been injured in the battle of Chancellorsville, May 3, 1863, by the explosion of a shell (he thinks); that he was lying on the ground on his right side in line of battle, under a heavy artillery fire, when something hit him violently on the left side and knocked him senseless. When he came to, his mouth was filled with clotted blood. He spat blood for two days, with a cough which had not yet entirely left him. His left side swelled up and was tender from the armpit all the way down to the hip. He could not move the left leg at all (thigh included), and had but partial use of the right one. Sensation also was nearly abolished in the left lower extremity. The motion and sensation of the left upper extremity were considerably impaired. Had not had any difficulty in holding or in voiding his urine. He stated that the left side appeared to be badly bruised; but the skin was not broken.

When admitted to General Hospital the partial paralysis above mentioned still continued, and was most marked in the left lower extremity. He had dyspnoea and cough, but no expectoration. The left thorax was much shrunken, and tender under pressure. The left shoulder had fallen down a good deal below the level of its fellow on the opposite side. There was lateral curvature of the spine, and his posture in bed bore a strong resemblance to that produced by pleurostethos of the left side. Nothing abnormal was detected by auscultation and percussion. At this time there was no swelling or ecchymosis of the injured side, and no evidence that the ribs had been fractured. He complained of much soreness in the walls of the left thorax and the left side generally, and the motion of the left arm seemed to be much impaired on that account. His intellect was clear, and he presented no symptoms whatever diagnostic of a cerebral lesion.

He was thin and rather pale (exsanguinated); bowels constipated. He was manifestly suffering from the consequences of extensive contusion of the left side and concussion of the spinal cord. Treatment: six dry cups were ordered to be applied daily over the spine, bowels to be kept open with laxatives (pulv. aloes et rhei), and he was allowed a full diet.

July 1. The dry cupping seems to benefit him very much, and the paralysis is rapidly disappearing; directed the cups to be applied every two or three days instead of daily. He continued to improve.

August 15. Was up and going about on crutches. Discontinued the cups and prescribed acetate of strychnia in small doses. This remedy was discontinued at the end of a month, as it appeared to do him but little if any good.

During the fall and winter he continued to slowly improve, and by the middle of March threw his crutches aside, preferring now to walk with the aid of a cane only.

April 10, 1864. He stands erect; the falling down of the left shoulder, the shrinking of the left side, and the posture simulating pleurostethos have entirely disappeared. The left thigh is a trifle smaller and more flaccid than the right one. At times he has a feeling of numbness and tingling in the left arm, but none in the right one. At times he has the same abnormal sensations in the left thigh and leg, but not in the right. He

presents a curious limp in his gait in walking. His body sinks very low on placing its weight on the left limb, from deficiency in the power of the extensor muscles, as compared with that of the flexor muscles of the limb, to support the body at its proper height in walking, and thus a strange hobbling is produced, the like of which I have only seen in some cases of rupture of the ligamentum patellæ.

In this case there was concussion of the brain as well as that of the spinal cord. There was also severe contusion of the thorax, complicated with contusion of the lungs.

The great advantage derived from the application of dry cups to the region of the spine in the treatment of this case is worthy of special mention. Cupping, either wet or dry, according to circumstances, must be ranked among the most reliable of the means at our disposal for the arrest of inflammation in, or the removal of congestion from, the parts located within the spinal canal. The application of wet cups is especially adapted to the cases of inflammation of the spinal cord or its membranes, and that of dry cups to the cases of concussion; and whenever inflammatory action appears in a case of concussion of the spine the wet cupping should, as a general rule, be employed in the place of the dry.

Morse was discharged from the service on surgeon's certificate of disability, at Stanton Hospital. He had been treated in ward No. 10, under care of Ass't Surg. George A. Mursick, U. S. Vols.

CASE XIII. *Concussion of the Spine from Firearms, with Fracture of the Spinous Process of the Second Lumbar Vertebra.*—Private John Quaid, Co. F, 6th Michigan Cavalry, aged 18, and of sound constitution, received a severe gunshot wound of the lumbar region in action near Salem Church, Va., May 28, 1864. He was hit about two inches to the left of the second lumbar vertebra (middle line) by a minie ball, which passed transversely to the right, and somewhat obliquely forward, through the lumbar muscles, and escaped about five inches to the right of the median line. He fell down immediately, and on attempting to get up again found that his lower limbs were paralyzed (paraplegia). The paralysis was complete, both as to sensation and motion, and did not begin to disappear till after the lapse of five days. The bladder was also paralyzed, and he required catheterization for three days, the urine evacuated by the instrument being bloody. His bowels did not move for several days.

He was brought to Stanton General Hospital 4th June, 1864. His general condition was good, and he was rapidly recovering the use of his lower extremities, but there was still partial paraplegia. Examination showed that the spinous process of the second lumbar vertebra was fractured, but there did not appear to be any injury of the lamina, or any other portion of the vertebra. He complained of pain, referred to the right hip, and the paralysis was most marked in that locality. The cold water dressing was applied to the wound, and he was allowed a full diet.

June 17. Condition of patient good, and he is doing well.

19th. Removed a small fragment of the spinous process which has become detached.

July 12. Removed another fragment of the spinous process. The patient

is doing well in every respect. He can move his lower limbs freely as he lays in bed, but on endeavouring to stand upright he complains of weakness in the hips, and the trunk falls forward in consequence of it. He can walk with the aid of crutches. He complains of a queer benumbed sensation, which is confined to the right hip and to the right thigh.

21st. Orifice of exit nearly healed, but the orifice of entrance presents a sloughy appearance. No constitutional disturbance. Prescribed liquor potass. permanganat. f $\ddot{\text{s}}$ ij to fOj, as a wash.

28th. Sloughing has stopped, and wound granulating finely; lower extremities, and especially right hip, still weak, but improving, and he now walks pretty well with the aid of a cane only.

This was a case of gunshot wound of the loins, with fracture of the spinous process of the second lumbar vertebra, and concussion of the spinal cord. Attention is again invited to it, because concussion of the cord is not commonly seen in connection with fracture of a spinous process in military practice. The writer has examined a considerable number of cases of fracture of that process, and the foregoing is the only one among them attended with well-marked concussion of the spinal cord. There is no reason to believe that any other injury was sustained by the second lumbar vertebra besides the fracture of its spine.

The case also affords strong evidence of the small amount of danger which usually attends gunshot fracture of the spinous process of a vertebra, a circumstance which has already been mentioned.

The case is still under observation.

CASE XIV. *Gunshot Wound and Concussion of the Spine.*—Private Timothy Flearty, Co. A, 1st Maryland Cavalry, a middle-aged man, of good constitution, was admitted to Stanton General Hospital 12th December, 1862, having been wounded on the previous day by a conical musket ball, which penetrated the lumbar muscles a little to the right side of the spine, and produced paraplegia. On exploring the wound with my finger, I found that the bullet had passed forwards, somewhat downwards, and slightly inwards, exposing to some extent the body and the transverse process of the second lumbar vertebra. After careful examination, I failed to detect any fracture, and did not find the bullet. The paralysis of the lower extremities was complete, both as to sensation and motion. The urinary bladder was also paralyzed, and he could not pass any water without the aid of a catheter. His general condition was favourable. He was in good spirits, and had an excellent appetite.

Treatment, simple dressings to wound, a nourishing diet, and catheterization twice daily, especial pains being taken to prevent the formation of a sacral bed-sore at the same time.

During the month of January, 1863, he began to recover the power of moving his limbs in bed to some extent.

February 1. The bladder has recovered its tone, so that it is no longer necessary to use the catheter, except occasionally. During this month the paraplegia continued to slowly diminish. The bullet, a conical one, came away in the dressings, having gravitated down from its place of lodgment as the patient lay in bed.

During the next month (March), the paraplegia continued to disappear. The electro-magnetic battery was employed with apparent benefit at this time.

April 6. He begins to sit up. He can stand with a little assistance. He has difficulty in holding his urine on assuming the erect posture, which has probably been occasioned by the prolonged use of the catheter. The urine, also, is scanty. Prescribed the following mixture: R.—Tinct. cantharidis fʒj; extract. fluid. buchu fʒiv; spirit. ether. nitric. fʒiv; potass. acetat. gr. xxx. Cochlearia parva quater qua que horā sumenda. In a few days, the urinary difficulty was removed.

14th. Ordered tinct. ferri muriat. gtt. x, ter in die. Under this treatment he steadily, although but slowly, improved, and the remedy was continued for several months. At the advent of summer, he began to walk with crutches. At this time he was troubled with constipation, which was ultimately relieved by the following recipe: Extract. colocynth. comp., pulv. aloes, &c gr. xxiv; pulv. ipecac. gr. ij. Divide in pil. No. 12. Dose, two pills pro re nata.

August 15. He left the hospital on a furlough for 60 days. The wound is healed.

October 15. He returned from furlough improved.

November 19. The wound has reopened, and presents an indolent character. Prescribed for it a stimulating wash of the sulphate of copper gr. v to ʒj.

January 1, 1864. He can walk without crutches, but his step is tottering and feeble. He continued to slowly improve through the winter.

April 4. He now walks pretty well with the aid of a cane, but his lower limbs are still weak. The wound reopens itself after variable intervals, and, after discharging a while, closes again.

May 3. He was transferred to General Hospital at Philadelphia, still improving slowly.

The treatment required by concussion is, in most respects, identical with that required by fracture of the spine. During the period of paralysis, in both alike, the same attention should be paid to the condition of the bladder, to the prevention of bed-sores, to the state of the bowels, and to supporting the patient by suitable alimentation. Severe cases of spinal concussion will also require the application of enps to the back, and, if the paraplegia is persistent, the employment of electro-magnetism, with the administration of strychnia. Iron and the bitter tonics will also be found useful.

ART. II.—*Treatment of Fractures of the Femur by Extension effected by means of Weights.* By JAMES TYSON, M. D., Act. Asst. Surg. U. S. A., late Resident Surgeon Pennsylvania Hospital.

THE attention of the profession has been for some time called to a method of treatment for fractures in the shaft of the femur, of which the essential feature is extension in the line of the thigh's axis, by means of a weight, exerting its influence through a cord and pulley; and this with or without lateral support.

Having had peculiar opportunities of testing this apparatus, and supposing the literature of the subject to have acquired additional interest in consequence of a recent more general use of the plan, the writer has been induced to look it up to some extent, at least among American practitioners.

The first paper upon the subject, within the knowledge of the writer, was published by LUKE HOWE, M. D., in the *New England Journal of Medicine and Surgery* for July, 1824. His apparatus consisted mainly as follows: *First*, "of a pulley on a staff eight or ten inches long, to be screwed on the foot-piece of the bedstead." *Second*, of a gaiter for the foot, through which, by cord and attached weight, extension was to be made over the pulley in the axis of the limb. *Third*, of a counter-extending band for the perineum, connected by a strap with the head-board—counter-extension being divided between this and the inclination of the body towards the head of the bed; the latter accomplished by elevating the foot of the bed from four to eight inches. With regard to lateral splints, the writer remarks: "When this apparatus is properly applied, splints will not be found indispensable; yet it would be well to use them, of convenient length, over proper compresses and cushions, also the many-tailed bandage, or bandage of strips. To prevent the rotation of the limb by the pressure of the bedclothes, three pieces of board are to be made into the form of a cradle, without the bottom, and placed on the sides of the foot and leg, including the pillows and other compresses; a cleft must be sawed into the foot-piece to admit the passage of the extending cord." The advantages claimed for the apparatus are these: *First*, a diminished danger of perineal excoriations, counter-extension being obtained, for the most part, by the inclination of the body. *Second*, extension and counter-extension were made more directly in the axis of the limb. *Third*, less restraint in the motions of the body, which are admitted to considerable extent, without disturbance of the fractured limb.

But two cases are reported by Dr. Howe as treated by this apparatus. One a boy of 12 years, who, by the upsetting of a cart, had received an oblique fracture of the thigh, near its middle. The second, a case of fracture of the neck, in a lady of 74. The former recovered "without the least shortening or deformity." In the latter, in consequence of her advanced age and extreme emaciation, considerable ulceration of the back and sacrum was discovered on the twenty-eighth day.

Now, as the muscular resistance in a boy of 12 is but slight, as the favourable circumstances of youth are such as to insure a good cure by almost any apparatus, and as the second case proved a total failure, it is but reasonable to suppose the profession were not favourably impressed with the mode of treatment, and that few, if any, were induced to test it.

The next article we have on the subject is entitled a "*Method of Treating Fracture of the Thigh-Bone*, by WILLIAM C. DANIELL, M. D., of Savannah, Georgia [with a plate]," published in the *American Journal*

of *Medical Sciences* for August, 1829. The writer describes his apparatus as follows:—

“A piece of poplar plank, long enough to extend from just below the buttock to eighteen inches beyond the foot, was made on the surface slightly concave to receive the thigh; the upper end was cut in a semilunar form, to fit it better to the buttock, and made six inches wide; the lower end was four inches wide. On each side of the lower end was attached a piece of board three inches high, extending up to the knee with gradually reduced height. A piece of board five inches high was then fitted in the lower end, at a right angle with the lower board. In the middle of the upper edge of this piece was placed a small wooden roller, with a concave edge, which was retained by a wire axis. The lower end of this splint, which projected beyond the foot of the bed, was secured by passing a screw through the bottom-piece into the foot-board of the bed. The fractured limb was then placed in this splint. The many-tailed bandage was applied over the fractured portion (the bones having first been placed in apposition), over which, at equal distances apart, and around the limb, four thin wooden splints, six inches long, were placed, and secured by muslin strips. A bag of dried moss was then applied on each side of the thigh, and secured by tapes passing under the board supporting the thigh, and over the limb. A silk handkerchief was then passed around the ankle, and tied at the bottom of the foot. To this projecting portion of the handkerchief was fastened a small flaxen cord; and that, passing over the roller placed in the end of the case, supported a small weight. A muslin bandage was passed around the chest, to which bandages were fastened for the purpose of fixing the body to the head-board, to prevent its being drawn down. *This, however, was soon found to be superfluous, as the weight of the body was quite sufficient for the purpose of resistance to the extending power, and was consequently discontinued.*”

The advantages claimed by Dr. Daniell were identical with those of Howe, as virtually was the plan, with this exception, that the former relies upon the resistance of the body alone as the counter-extending force. Both laid stress upon the advantages of “continuance of power” thus obtained, contending that it alone fulfilled that all-important indication, “a constant power in operation, to counteract the contraction of the muscles of the fractured limb.” But that the weight used by each was insufficient for the majority of cases, we think, will appear from the accompanying report.

The cases reported by Dr. Daniell, as thus treated, were also two. The first, a child seven months old; in this case the apparatus being much simpler, but essentially the same. In the second ease to which the apparatus was applied, as per description, the age is not given. In both cases the fractured limb united without any shortening or deformity. Though that both were unsatisfactory test cases need hardly be asserted.

Again, in the *Southern Medical and Surgical Journal* for February, 1854, we find an article “*On the Best Plan of Treating Fractures in Country Practice,*” by A. L. DUGAS, M. D., &c.; and with regard to fractures of the thigh, we have the following:—

“Fractures of the thigh may be most easily managed by applying four wooden splints, a little shorter than the femur, around the thigh, and confining them by many-tailed bandages, suitable compresses having been, of course, interposed between the splints and integuments. In addition to these, a splint about four inches wide, and extending from the sides of the thorax to a little below the foot, will serve to keep the limb straight, and to maintain the foot in a proper

position. This splint should be secured by separate bandages passed around the abdomen, the thigh (over the short splint), the leg, and the foot. As *continued extension* in these cases is necessary, it may be effected by a weight, as suggested for fractures below the knee, *the resistance offered by the weight of the body being sufficient for counter-extension.* It is scarcely necessary to add that the patient should lie upon a hard bed, so that his body may be horizontal as possible, and thus prevent any bending at the seat of fracture. We thus avoid the chafings or abrasions so commonly attending the use of splints that bear upon the perineum or axilla."

It will be seen that here, also, the resistance offered by the weight of the body alone is considered sufficient for counter-extending purposes.

No cases are reported by Dr. Dugas, and there is, of course, no proof of the practical utility of his "plan," except the presumption in its favour as emanating from an eminent and experienced surgeon.

At a stated meeting of the New York Academy of Medicine, held March 20th, 1861, Dr. GURDON BUCK read a paper upon "*A New Method of Treating Fractures of the Femur,*" suggested by its successful application to the treatment of *Morbus Coxarius*, by Dr. H. G. DAVIS, of New York City.

The medium of extension is adhesive plaster, applied as for a Physick's Desault, while the limb is covered by a bandage as far as the plaster extends. Around the block placed in the loop thus formed is passed an elastic rubber band as an extending cord.

"A strip of inch board, three inches wide, is fastened upright to the foot of the bedstead, and perforated at the height of four or five inches above the mattress. Through this hole the extending cord is to be passed, and on the further side of the strap a screw pulley should be inserted at the proper level, over which the cord with the weight attached is to play. The foot-board of the bedstead, if there is one, may be perforated at the proper level, and the screw pulley inserted at the further side of it, so as to answer equally well. The coaptation splints, which may be of the ordinary sort, should be secured by those elastic bands like suspender webbing, fitted with buckles; these have the advantage of keeping up uniform concentric pressure, as the limb diminishes from the subsidence of swelling. Counter-extension must be maintained by the usual perineum band lengthened out in the direction of the long axis of the body, and fastened to the head of the bedstead. A thin, wedge-shaped hair cushion, to raise the heel above the mattress, and a bag filled with bran or sand, to place on the outside of the foot to prevent rotation outwards, complete the appliances requisite to carry out this method of treatment. There need be no delay in its application. The sooner after the occurrence of the injury the limb is put up, the better. The contraction of the muscles is thus antagonized from the outset, and the rough ends of the fragments are prevented from fretting the soft parts."

The advantages claimed for his method by Dr. Buck were: 1. The maintenance of uninterrupted and efficient extension, without producing intolerable pain, excoriations, sloughings, and tedious sores. 2. The diminution of the sufferings and the irksomeness of long confinement to one position. 3. Its cheapness and easy application. 4. Its permanence—thus calling less frequently for reapplication or adjustment.

Twenty-one cases were reported in full, at the time, but the journal upon which we are dependent for Dr. Buck's ideas does not give results ex-

cept so far as to state that "by actual measurement they are equal to any that have hitherto been obtained." Numerals are not given. Dr. Buck further states that he had a case then under treatment where the shortening was an inch, and he was afraid the limb could not be brought down any further. So that we may be justified in regarding one inch as the maximum.

In the course of the remarks elicited by the reading of the paper, it appeared that two gentlemen had recently used this mode of extension, one of whom had depended solely upon the elevation of the foot of the bed for counter-extension.

Hamilton, whose work is justly admitted as the leading American authority in fractures, alludes to this mode of treatment in the following words: "Having myself witnessed the operation of this apparatus, especially in some of the U. S. General Hospitals, I am prepared to attest its excellence and efficiency."

The weight extension was introduced at the Pennsylvania Hospital, in February, 1862, by Dr. Edw. HARTSHORNE, the attending surgeon on duty, with the aid of Dr. Charles C. Lee, U. S. A., then resident surgeon. Dr. H. had been so much pleased with its operation in some cases at the New York Hospital, as shown to him by Dr. Buck, that he encouraged Dr. Lee to resort to it in all the cases then presenting. His desire was to try the weight without any special mechanism, such arrangements and means being employed as were within reach in the wards at the time, and might be had in any private house. The first attempts were therefore experimental to some extent, and the apparatus was altogether elementary. This apparatus, in its primitive form, is thus described by Dr. Lee.

"Not being able to get the usual fixed pulleys, I suspended the weights simply over the back of a chair, though conscious that much of the advantage of the system was thus lost by friction. As regards the additional apparatus, simple lateral splints, Physick's Desault, and long fracture-box were used almost indiscriminately at first; but, after a little experience, the latter was thought preferable, as making the patient most comfortable, and giving the best results. In adults, counter-extension by an adhesive plaster band, passing around the perineum, and fastened to the top of the bed, was also used; in children, the foot of the bed was elevated in some cases, making the weight of the body the counter-extending force—in others, no counter-extension at all was employed, and with just as good results, when the extending weight was kept clear of the floor. The extension band was simple bandage, generally, an elastic band being used in two or three cases only."

After October, 1862, the "Extension by Weights" ceased to be the usual method of the Hospital (though two or three cases were thus treated in the interval), until October, 1863, when the method was resumed, and thence followed the very satisfactory series of cases now about to be reported.

The apparatus, as now used, is not essentially different from that described by Dr. Lee, though a more extended experience has led us to modify it somewhat, and to discriminate more accurately such cases as

may require a slight alteration in the additional appliances, as lateral support, counter-extension, &c.

As there are no foot-boards, the *pulley*, which may be a common ribbon block slightly grooved on its periphery, is contained in a stand with a firm basis, which may be carried from bed to bed as required, or removed from the ward when not in use. The *medium of extension* is adhesive plaster, carried upon each side of the line within a short distance of the point of fracture, and forming a loop under the foot, to which is attached the cord with weight appended. The foot and limb are then bandaged until the plaster is covered in. The *weight* is variable, though for an adult from 15 to 20 pounds are generally sufficient—the former being sufficient for the majority of cases. In children, from 5 to 10 pounds will be required. The material used, of course, must depend upon convenience. Sand, shot, lead, iron, pebbles, flatirons, bricks, have served the purpose. Bricks have been found to answer quite as well as more expensive articles. But a part of the weight is used at the beginning; 10 pounds being usually appended at the first dressing of adults and from 1 to 5 in children. This is important, for so much weight at the beginning, even if well borne by the patient, will often draw down the adhesive plaster from its proper position. This, however, must depend upon the quality of the plaster, which might sometimes be improved. The band sustaining the weight is of inelastic material. We can conceive no advantage in yielding to the shaft in the slightest degree, whereas, on the other hand, there is an evident disadvantage attached to the use of an elastic cord, in this, that it impairs the uniformity and certainty of the extension.

As *lateral support*, sand bags are sufficient for many cases, but where there is a decided tendency to eversion, this must be overcome by other means. Nothing fulfills this indication so well as a long external splint, extending from the crest of the ilium to a short distance below the malleolus. It is possible to overcome this tendency by attaching a bandage to the instep, and tying it over on the opposite side of the bed. But the long splint is safer, and does not interfere with extension, or the comfort of the patient; or a long fracture-box, with a long outside piece reaching to the thorax, as suggested by Dr. Hartshorne, would, perhaps, be still better. *Counter-extension*, other than that effected by the weight of the body, aided by the elevation of the foot of the bed, is not necessary. Simple *retention* is all that is required. This, too, seems to accord with the experience of others who have extensively used the apparatus. I am informed by Dr. De Mola, late resident at Bellevue Hospital, N. Y., they there dispense entirely with the perineal band, the counter-extension being made by the body of the patient, by raising the foot of the bed on a couple of bricks. Yet there may be cases in which the perineal band will be of service.

The advantages of this mode of treatment are comprised in those above given, as claimed by Dr. Buck, being in no degree exaggerated by him.

Especially is this the case with the results, which we consider even better than those generally obtained, as we will endeavour to show before concluding. Too much stress cannot be placed upon the indication which is fulfilled by the *constancy* of the extending force. Whatever be the apparatus applied other than this, it is scarcely possible to visit the patient at ordinary intervals, but that readjustment is called for, the extension having become impaired. But in the weights we have a constantly extending force, directly in the axis of the limb, never diminishing, never varying, except when weights are added or removed; while the labour of readjustment, which, in a large number of cases is very considerable, is thus avoided.

The only objection there would appear to be, is, that motion being allowed to too great an extent, displacement of the fragments would be admitted. But this is only apparent. In the first place, the discomfort of the patient being very slight, the occasion for change of position does not occur—and in the second, the apparatus permits the motion of the limb to a greater extent without disturbing the fragments. For the extension remains constant and in one direction, whatever be the position of the body. Suppose the patient to rise—it is impossible for the upper fragment to slide down over the lower, for the weights keep drawing the latter down as the upper descends. And even supposing the patient to turn over on his face, which we have known boys repeatedly to do in a Physick's Desault, as also once with this apparatus, the extension is still there, drawing down in the axis of the limb, the extending cord being twisted instead of the bone, and really performing its work as efficiently as if the patient were on his back.

Again, supposing the weight found necessary be such that notwithstanding the elevation of the foot of the bed, the body is gradually drawn down towards the foot. The patient may be instructed at the beginning, and immediately learns to draw himself up by laying hold of the head of the bed. Nor is the perineal band necessarily omitted. If required to retain the body, it may be passed around one or both groins, and fastened to the head of the bed; interfering very slightly with the comfort of the patient, and it will aid in securing more perfect quietude of body. And it was as much with this latter view as with any other that it was used in one of the cases about to be reported.

CASE I. W. B., aged 75, slipping, fell upon a pavement with such force as to fracture the right femur in its upper third. This occurred on or about the 13th of September, 1863. A physician was called, who applied an apparatus answering in description to a Physick's Desault. But the old man, becoming impatient, refused to submit to treatment, and threw aside all appliances. He was admitted to the Pennsylvania Hospital October 1st, 1863, *over two weeks after the accident had happened*, with decided eversion, and shortening of $2\frac{1}{2}$ inches. Distinct crepitus was not elicited.

The usual vehicle for extension was applied, the adhesive strips extending only as high as the condyles of the femur, while a roller was applied from the toes to the same point. The leg was drawn out to the length of its fellow, and a weight of 9 pounds attached to the loop through the medium of the cord and pulley. The leg was supported laterally by long sand-bags, and the weight in a few days increased to 10 pounds. No perineal band was used, nor was the foot of the bed elevated, the patient's more than ordinary weight seeming sufficient for retention. He was remarkably quiet and tractable, and at the end of 31 days from date of admission, or 45 from the time of accident, all extension was removed, and the thigh bandaged and protected at point of fracture by a pasteboard splint; 47 days after admission all dressings were removed except a supporting bandage, and the patient was directed to attempt the use of the limb. On the 56th day after admission, he was discharged with but one-fourth of an inch appreciable shortening, walking quite comfortably with aid of a cane. On the 4th of March, 1864, 156 days after admission, patient returned to the hospital for inspection. Most careful measurement detected not more than one-half an inch shortening. He walked with a cane, and limped slightly. I saw him again, May 18th, 1864, when he informed me that by the aid of a heel half an inch higher than the opposite, he can walk with scarcely appreciable limp.

The result in the present case was the more gratifying from the fact that the age of the patient, his great obesity, and the considerable interval between the date of the accident and that of his admission, had caused us to prognosticate unfavourably. Accuracy of measurement, which is in all cases difficult, was here rendered still more so by the obesity of the patient; but in making the limb half an inch shorter than its fellow, we feel that we have given sufficient latitude to cover any error.

CASE II. P. G., a labourer, aged 26, fell from a tree, fracturing his right thigh at about the junction of the middle with the upper third. He was admitted to the Pennsylvania Hospital, October 19th, 1863, 20 hours after the accident. There was pain, with spasm of the muscles, and distinct crepitus, though there was shortening of only half an inch; making it probable that the fracture was nearly transverse. Extension was applied as in the preceding case, though the lateral support was by padded splints, the outer long, extending several inches above the crest of the ilium, and about the same distance below the external malleolus.

A weight of 9 pounds was applied, which was, two days later increased to 15, without discomfort to the patient. This was further increased to $19\frac{3}{4}$ upon the 30th, and on Nov. 2d, twelve days after the accident, $6\frac{1}{4}$ pounds were added, making in all 26 pounds. But with this weight, the body descended in bed, and the last addition was removed, leaving less than 20 pounds, while the foot of the bed was elevated. Under this extension, the patient remained forty-two days, at the expiration of which time it was removed, careful measurement making the limb between $\frac{1}{8}$ and $\frac{1}{4}$ of an inch shorter than its fellow. The splints of binder's board were then applied to the seat of fracture, and patient retained in bed two weeks longer, after which he was directed to attempt some motion, retaining the lateral supports an additional week.

On March 5th, 1864, one hundred and thirty-eight days after the acci-

dent, he is walking without the aid of a cane, and limping slightly; repeated measurement detecting shortening to the amount of $\frac{1}{4}$ of an inch as a maximum. He informs me by letter, May 30th, 1864, that he suffers very little inconvenience from the limb, having the heel of his boot $\frac{1}{6}$ of an inch higher than its fellow, but thinks $\frac{1}{4}$ would be better; thus confirming the measurement.

CASE III. J. K., aged 7, fell from a flour wagon, Oct. 30th, 1863, fracturing left thigh somewhat obliquely, in the lower third, and was admitted to the Pennsylvania Hospital immediately after the accident. Extreme pain, crepitus, eversion and shortening were apparent, the latter being an inch. Extension was seenred in the usual method, a weight of 10 pounds being attached. Lateral splints were applied as in the preceding case, the outer extending above the crest at the ilium, and below the malleolus. On the fourth day, the extension was increased to 16 pounds; but under this weight, the body descended towards the foot of the bed, while the little fellow was so restless as to extricate himself from the splints, and even to turn over in bed. Accordingly, with a view to prevent this, as well as to guard against the descent of the body, a perineal band was applied on each side, and attached to the head of the bed. With extension to this amount, he remained thirty-five days, being daily examined, and derangement of dressing, if existing, corrected. Extension being removed, on careful measurement no shortening appeared. The pasteboards were applied, and the patient retained in bed eight days longer, when he was directed to move about; and on Christmas day, fifty-six days after admission, was discharged with no shortening.

CASE IV. J. C., elocutionist, aged 45, while walking upon an icy pavement, on the night of Dec. 11th, 1863, fell upon the right hip. He was brought to the Pennsylvania Hospital early on the morning of the 12th, complaining of excruciating, deep-seated pain in the upper part of thigh, in consequence of which, no thorough examination could be made until ether had been administered. Shortening of but $\frac{1}{2}$ an inch was discovered, and on extending the thigh and rotating, a distinct crepitus was elicited. The age of the patient, the small amount of shortening, the peculiar manipulation rendered necessary to produce crepitus, and the deep-seated pain led us to suspect an intra-capsular fracture, or at least a fracture of the neck without the capsule.

An extension of $9\frac{1}{2}$ pounds was applied, which was increased to 15 in two days, while lateral support was furnished by sand-bags for about two weeks. But at the end of this time, there being no unnatural tendency to eversion, these also were removed. The extension was discontinued at the end of forty-four days, when shortening of $\frac{1}{4}$ of an inch was appreciable. The usual pasteboard splint was applied, and patient was directed to remain in bed two weeks longer, after which he began to move about on crutches. An examination eighty-four days after date of accident, made scarcely half an inch shortening. He was discharged March 28th, 1864, one hundred and seven days after admission, with $\frac{3}{4}$ of an inch shortening, walking with the aid of one crutch.

The result in this case would also appear to confirm the diagnosis. For, while the patient was much longer in regaining the use of his limb, as is always the case in intra-capsular fractures, so the shortening is no

less than at date of admission. But when we consider that in intra-capsular fractures the shortening, at first but slight, becomes greater until it has attained $2\frac{1}{2}$ or even 3 inches, the case is by no means an unfavourable one.

CASE V. Mary W., aged 44, fell down stairs on Christmas, 1863, and was admitted to the Pennsylvania Hospital on the same day, with some injury of her left thigh. Examination detected shortening of an inch, eversion and crepitus, showing a fracture, which was in the upper-third.

The extension apparatus was applied, with a weight of 10 pounds, increased in a few days to 15. The lateral supports were sand-bags, discontinued after four weeks. At the termination of forty-one days, extension was removed and pasteboard splints applied, there being apparently but $\frac{1}{4}$ of an inch shortening. Patient was directed to lie in bed two weeks longer, after which she began to move about. Examination seventy-seven days after the accident found the shortening $\frac{7}{8}$ of an inch. Extension was reapplied for two weeks, with little expectation of its lengthening the limb. And thus it proved. She was finally discharged, April 25th, 1864, walking with the aid of a crutch, but still having $\frac{7}{8}$ of an inch shortening according to measurement. Though the patient stated that as far as her own sensation could discern, the leg appeared as long as its fellow.

It will be noticed that there was a decided increase in the amount of shortening after the weights were discontinued. This we attribute to a premature removal of the extension, and allowing the patient to use the limb too early. In this case, the extension was continued but forty-one days, a period our experience has shown to be too short for adults, though it is considered sufficient by some authorities. The present report gives three additional cases of adults in which the extension was discontinued at the termination of six weeks; in each of which the shortening increased. In Case I., that of W. B., the increase was $\frac{1}{4}$ of an inch; in Case II., P. G., a healthy farmer, aged 26, the increase was $\frac{1}{8}$, and in Case IV., that of J. C., there was an increase of $\frac{1}{2}$. That just reported, it will be remembered, gave us $\frac{1}{4}$ at the time the weights were removed, and $\frac{7}{8}$ three weeks later, a difference of $\frac{5}{8}$. Some of these discrepancies may be due to errors in measurement, though we cannot account for all of them in this way.

This accords, too, with the ideas of those older surgeons whose actual experience in treatment entitles their opinions to great respect. Drs. Norris, Neill, and Hewson, of this city, inform me that they do not consider thighs firm at the end of six weeks, and that they have known them to "go back" in consequence of too speedy removal of extension. Dr. E. Hartshorne also says he has known cases of shortening and angular deformity, and even refracture, to occur from the too early use of the limb, and that he does not approve of the removal of splints until eight weeks, *at least*, have passed, that the patient ought not to walk until after sixty days at the earliest, and often not even then.

Hamilton, it is true, writes thus :—

"The extension may, however, be relaxed as soon, generally, as the 28th day, and the leg may be lifted daily after this, and the knee and ankle very gently flexed and rubbed, but never, so early as this, can the short side splints be abandoned with safety."

And we admit ourselves to have been misled by these words. Yet, a closer examination of the text will convince us that he is no advocate of the early removal of essential dressings. In the same paragraph he writes :—

"Still more important do I regard the continuance of the long side splint—no longer now as a means of extension, but only of retention—lest the weight of the limb should turn the foot gradually out, or occasion some other deformity."

And certainly, if the union is so imperfect as to permit eversion in consequence of the weight of the limb, it is such as to permit shortening by its use and by the contraction of powerful muscles.

Again,

"In the case of an adult, we ought never to encourage a hope that he can be released from his splints in less than eight weeks, although we may find it safe to remove them as early as the end of the sixth; *but the patient seldom wears the splints too long, while they are often removed too soon.* Remember that the fragments are, in nine cases out of ten, uniting side by side, and not end to end; the muscles which act upon them are powerful, and the weight of the limb is great, so that the time within which the limb can be trusted alone is never short."

We must bear in mind, too, that where splints are closely applied, as in Hamilton's apparatus, they act in maintaining the length of the limb after extension is discontinued, whereas, in the mode of extension by weights, lateral splints are but secondary, being never applied so as to produce compression.

Paget tells us that—

"The data, at present collected concerning the times in which the several parts of the reparative process are usually completed after fractures of adult human bones, are not sufficient for more than a general and approximate estimate. They may be thus generally reckoned. To the second or third day after the injury, inflammatory exudation in and about the parts; thence to the eighth or tenth, seeming inaction with subsidence of inflammation; thence to about the twentieth, production of reparative material, and its gradual development to its fibrous or cartilaginous condition; thenceforward its gradual ossification, a part of the process which is, however, most variable in both its time of commencement, and its rate of progress, and which is probably *rarely completed before the ninth or tenth week*, though the limb may long previously have recovered its fitness for support or other use. From this time the rate of change is so uncertain that it is impossible to assign the average time within which the perfection of the repair is, if ever, accomplished."

CASE VI. M. S., aged 37, fell heavily upon an icy pavement, Jan. 4th, 1864, and was admitted to the Pennsylvania Hospital upon the same day, with an oblique fracture of the right thigh. There was very decided eversion, with shortening of an inch, and spasmodic contraction of the muscles. The suffering was so extreme, and the demonstrations of the patient so violent, as not to permit the manipulation requisite to produce crepitus.

The usual mode of extension was applied with a weight of $9\frac{1}{2}$ pounds,

which was, in a few days, increased to 15. Sand-bags formed the lateral support, but the case was one in which the indications were not fulfilled by them. The eversion was extreme, and could only be overcome by a bandage encircling the foot and carried to the opposite side of the bed.

Extension was continued fifty-six days, when pasteboards were applied, and he was retained in bed two weeks longer. He was discharged fourteen weeks after admission with about $\frac{1}{4}$ of an inch shortening. Saw patient May 19th, 1864; found him walking, still using crutches, though he scarcely appeared to depend upon them. He informed me that he had, since his discharge from the hospital, an attack of acute rheumatism, which had made him cautious in relying entirely upon the fractured limb. He also stated that one thickness of an ordinary piece of felt, placed in his shoe, made the fractured limb as long as its fellow.

CASE VII. E. B., aged 44, passing through a market on the night of February 23, 1864, ran against a butcher's block, and immediately fell to the ground; and on being raised to her feet, again fell instantaneously. She was brought to the Pennsylvania Hospital next morning. Shortening of $1\frac{1}{2}$ inch and decided eversion were apparent at once; and after etherization, by extending, and at the same time rotating the limb, crepitus was elicited. Thus were presented most of the peculiarities of a fractare of the neck of the thigh. 1. Production by a slight cause. 2. Patient, a woman, and over forty. 3. No external bruising or ecchymosis of the parts. 4. Crepitus only elicited by extending the limb, and rotating while extended.

The usual apparatus was applied, a weight of 10 pounds being attached. And as there was such decided eversion as could not be controlled by sand-bags, a long external splint was applied, extending from above the ilium to below external malleolus. In three days the weight was increased to 16 pounds, and the foot of the bed elevated to secure better retention. At the end of twenty-three days after admission, leg seeming a little short, $4\frac{1}{2}$ pounds were added. With this weight, extension was continued fifty-six days. She was retained in bed two weeks longer, and then directed to attempt motion. I saw her May 31st, when she said there was no shortening apparent to her, though I have made it $\frac{1}{2}$ an inch in making out the average; this having appeared when the extension was removed.

CASE VIII. A. G., a healthy young laborer, aged 23, having fallen from a truck across a railroad, was struck by the wheels of another following that from which he fell. He was admitted to the hospital March 11th, 1864, soon after the accident, when examination revealed a fracture of the right femur, at the junction between the upper and middle thirds. There was eversion, distinct crepitus, and shortening of $1\frac{1}{4}$ inches, while the upper fragment was tilted outwards and slightly upwards. An extension of 10 pounds was applied in the usual manner, and a long external splint adjusted. The weight was increased to 15 pounds in the usual time, and the foot of the bed was elevated. Ten days later, the leg appearing a little short, one pound was added. This weight was continued sixty days, when, on measuring, no shortening appeared. Saw him May 31st, 1864. He was moving about, and there was no shortening.

CASE IX. On the evening of March 14th, 1864, J. W. A., aged 5 years, was admitted to the Pennsylvania Hospital, with a fracture of the left thigh, middle third, produced by falling from a pile of boards. There were the

usual signs of fracture, with shortening of $\frac{5}{8}$ of an inch. The "extension by weights" was applied, $2\frac{1}{2}$ pounds being appended, while the thigh was supported externally by a sand-bag. In twenty-four hours the weight was increased to $4\frac{3}{4}$ pounds, which was further increased to 8 pounds. Extension was continued fifty days, and at the end of sixty, all dressings were removed, when accurate measurement detected about $\frac{1}{4}$ of an inch shortening, though the little fellow was discharged five days later, walking without the aid of a crutch, cane, or support of any kind.

CASE X. E. J., aged 7, was admitted February 25th, 1864, with an oblique fracture of the right femur, lower third. The limb was $1\frac{1}{2}$ inch short. The usual apparatus of weights was applied with lateral splints, which were replaced by sand-bags after two or three weeks. Extension was continued fifty-six days, when pasteboards were applied and the patient kept in bed two weeks longer. He was discharged May 9th, seventy-four days after admission, with no shortening.

CASE XI. Wm. H., aged 12, was run over by a cart, fracturing the right femur at the junction of the middle and lower thirds, for which he was admitted March 3d, 1864. There was shortening of $1\frac{1}{4}$ inch, with decided eversion. The usual extension was applied, and sand-bags as lateral support. This was continued fifty-six days, and the patient was retained in bed fourteen days after its removal. He was discharged sixty-seven days after admission, with no shortening.

CASE XII. C. S., aged 7, was admitted April 6th, 1864, with a fracture of the right thigh, having been run over by a furniture car. There was $\frac{7}{8}$ of an inch shortening. Extension by weights was applied with lateral splints, which were soon replaced by sand-bags. Extension was continued but five weeks, though the little fellow was retained in bed over three weeks longer. I saw him May 31st, when there was no shortening.

It would appear from this and two or three other cases reported, that it is safe to remove extension in the case of children, at an earlier date than in that of adults. This we believe to be the fact, and evidently with reason, for, besides having the increased reparative power of childhood, there is less muscular resistance to a good apposition of the fragments. For Cases X., XI., and XII., I am indebted to Dr. Elmer, present Resident Surgeon at the Pennsylvania Hospital.

The remaining cases occurred under the care of my colleague, Dr. H. C. Wood, Jr., and are reported by him.

CASE XIII. J. F., aged 14, came into the surgical ward of Pennsylvania Hospital, September 19th, 1863, with his left femur broken through its middle third. There was $1\frac{1}{2}$ inch of shortening.

Treatment.—Physick's Desault's apparatus was placed on him. He was thus treated until October 2d, when it was found that there was an inch of shortening, and extension by weights was substituted.

Result.—He was discharged December 1st, 1863, running about with crutches. The shortening was $\frac{1}{8}$ of an inch.

CASE XIV. M. McK., a school-boy, aged 9 years, came into the surgical ward of the Pennsylvania Hospital, September 30, 1863. His left femur

was broken at the junction of the upper and middle thirds. There was an inch and a quarter of shortening, conjoined with the usual symptoms of fracture. There was no injury to the soft parts. There was a marked tendency to eversion of the foot.

Treatment.—Extension by weights, with a short sand-bag and a short external splint reaching as high as the knee bound to the leg. A bandage was also thrown around the foot, and fastened to the side of the bed in such a way as to draw the toes in and the heel outwards.

Result.—He was discharged December 3, running about without crutches. The shortening was a quarter of an inch.

CASE XV. A. M., a school-boy, aged 9 years, came into the surgical ward of the Pennsylvania Hospital, October 1, 1863. His femur was obliquely fractured through the middle third, with two inches of shortening, and the usual signs of fracture. There was no injury to the soft parts.

Treatment.—Extension by weights, with a short external splint reaching nearly to the point of fracture, with the toes drawn inwards and the heel outwards by means of a bandage, to counteract the marked tendency to eversion of the foot.

Result.—He was discharged December 2, 1863. He was able to walk without crutches, and there was absolutely no shortening of the limb; the cure was perfect.

CASE XVI. B. McC., a labourer, aged 45, came into the surgical ward of the Pennsylvania Hospital, December 19, 1863. He had a very oblique fracture through the lower third of the left femur. At the time of his entrance the shortening was fully two inches. The tendency to eversion of the foot was marked. There was no injury to the soft parts.

Treatment.—Extension by weights, with a bandage drawing the toes inwards and the heel outwards, and a sand-bag close along each side of the leg.

Result.—The extension was taken off the beginning of the ninth week. The union was very firm, with a rather large mass of callus. The shortening was fully three-fourths of an inch. He was discharged with this amount of shortening, March 19, 1864, without crutches, but limping.

CASE XVII. H. McG., a school-boy, aged 10 years, was admitted into the surgical ward of the Pennsylvania Hospital, with his left femur broken in two places by a fall on the ice. The lower fracture was transverse, through the condyles; the two fragments could be moved on one another, producing marked crepitation. The other was oblique, through the middle third. The shortening was an inch and a half. The soft parts were not injured. No complications.

Treatment.—Extension with sand-bags, and the bandage around the toes and heel.

Result.—The extension was taken off at the end of the eighth week. Union was perfect. Some stiffness and pain in motion of the knee-joint, but no permanent injury to the joint. The shortening was a full eighth of an inch. He was discharged April 7, 1864, walking without the aid of crutches. One-quarter of an inch was recorded as the amount of shortening.

The tentative character of the treatment in many of these cases will be

apparent to the reader. This was necessary; for the writer did not know what had been written upon the subject until the treatment was terminated in the majority of the cases, and he had concluded to look up its literature. Especially was this the case with respect to the weight necessary to accomplish the best results. We are confident that that employed by each of the gentlemen quoted was insufficient for the purpose. It has been before said that about fifteen or twenty pounds will generally be sufficient for adults, from one to ten for children. But no rule can be adopted. Sufficient weight should be used to bring the limb down to its proper length. It has been suggested that "were there applied a trifle too much weight, the object would be defeated by absolute separation of the bone." There is no danger of this. Very many pounds would be required to extend muscles beyond their normal length; more than could be applied, for other reasons, by this or any apparatus. Muscular fibres are contractile, but not elastic, and we believe they would rupture before they would admit of such elongation as to cause an absolute separation of the two fragments.

There are included in the report seventeen cases, between the ages of five and seventy-five, presenting many varieties of fracture of the femur. Six are without any shortening, though this number includes but one adult. This is but a further confirmation of the well-established conclusion that the original length of the limb is rarely restored after fractures of adult femurs; though in children it is not uncommon, as also appears in the present report.

The range of shortening was from 0 to $\frac{7}{8}$ of an inch, while the average shortening in the whole number of cases is less than $\frac{1}{3}$. Again, in ten cases, varying in age from five to seventy-six, treated by Dr. Lee in the wards of the Pennsylvania Hospital, the maximum shortening was $\frac{3}{4}$, minimum 0, average about $\frac{1}{5}$; making the average shortening in the twenty-seven cases thus treated at the Pennsylvania Hospital about $\frac{1}{4}$ of an inch.

According to an analysis by Dr. Buck, of New York city, in seventy-four cases of fracture of the shaft of the femur, treated by various methods at the New York Hospital, nineteen resulted in no shortening whatever. Of the remaining fifty-five, the average shortening was a fraction less than $\frac{3}{4}$ of an inch. The average shortening of all the cases, including the nineteen in which there was no shortening, must therefore have been a fraction greater than $\frac{1}{2}$. Our own report includes twenty-seven cases of all kinds, not omitting one or two of the neck, and the average shortening is but $\frac{1}{3}$ of an inch.

Again, in order to compare these results with those of the Physick's Desault, which, with some slight modifications, has been the usual apparatus of the Pennsylvania Hospital, we had desired to take, in the order of their record, the results of twenty-seven cases treated by the latter apparatus; but finding the record previous to the twenty-sixth case somewhat unreliable, we have assumed a twenty-seventh case with *no shortening*,

which is granting the best possible result. The average amount of shortening in the twenty-seven cases is $\frac{3}{8}$ of an inch. So that the results attained in the "extension by weights" are at least equal to those of the Physiek's Desault, as used at the Pennsylvania Hospital, where, if anywhere, it is most accurately applied, repeatedly and carefully adjusted. And when we take into consideration the increased comfort of the patient, and the vastly diminished labours of the medical attendant, we see a great argument in favour of the universal use of extension by weights, until a more perfect apparatus is devised. And as regards deformity, alleged to result from this method, in one case only of those treated at the Pennsylvania Hospital was it at all appreciable, and that a case of rheumatic diathesis.

No special reference has been made to intra-capsular fractures, because our experience in the treatment of these cases has not been sufficient to justify it. Moreover, the difficulty of diagnosis is such, that its accuracy may often be questioned, *post-mortems* sometimes revealing error. So far, however, as a limited experience would warrant a conclusion, we deem the apparatus especially adapted to the treatment of this class of fractures. Dr. Swinburne, of Albany, N. Y., who prefers, in fractures of the shaft, a method of "simple extension" from the head to the foot of the bed, without any splints, treated three cases of intra-capsular fracture by weights, pulleys, and elevation of the foot of the bed. He writes: "Patients thus treated were even more comfortable than when lying in bed without any dressings at all, and certainly the results are more favourable; and some of my cases have resulted so well, that the gait does not discover any faulty condition of the limb, nor does measurement reveal more than from three-quarters to an inch of shortening, while the patient says there is no difference in the two limbs." We must not omit, however, the following statement of the same gentleman: "Although this method is applicable to the aged and enfeebled, it would be presuming too much to seek to apply it to fractures generally, and particularly those occurring in younger persons. From my own experience, it appears insufficient for the treatment of *any* but intra-capsular fractures."

Notwithstanding this statement, we think the results of the twenty-seven cases above reported, and the fact that it is now the established method at the New York and the Bellevue Hospitals, and has been very extensively and successfully employed in our army hospitals for compound fractures, justify a certain presumption in its favour. Whatever may be Dr. Swinburne's view with regard to other cases, however, he has certainly given us quite an argument in favour of the weights in the treatment of intra-capsular fractures, the only point upon which we were in doubt. In regard to compound fractures our personal experience is limited to one case, in which the simple extension by a weight, with sand-bags for side splints and a bran dressing for the wound were employed with the most encouraging success under Dr. Hartshorne's direction, during April, May, and June,

1864. The wound was a bad one, resulting from railroad injury, but the patient was eighteen years of age and previously healthy. The case afforded a striking illustration of the convenience and comfort of the method when combined with the bran dressing; but is incomplete in its history, as the patient was removed by his family before complete recovery. His convalescence was established, however, and he left the hospital with little shortening or other deformity.

In the above history and report, the writer has endeavoured to make as accurate and impartial an investigation of this subject as his facilities would permit. Fully appreciating the great difficulty necessarily existing in obtaining accurate measurements, he has in no instance trusted exclusively to his own, though oft repeated; but he has endeavoured to confirm them by the measurements of other medical gentlemen, and especially of the attending surgeons at different times on duty at the hospital; and wherever there have been disrepancies, he has always accepted that measurement which made the greatest amount of shortening.

ART. III.—*Surgical Notes of Cases of Gunshot Injuries occurring near Chattanooga, Tenn., in the Battles of Sept., Oct., and Nov., 1863.* By I. MOSES, M.D., Surgeon-in-Chief of General Hospital, and Medical Director of the Post of Chattanooga, Tenn.

HAVING received orders to report for duty as Medical Director of Chattanooga, which had been evacuated by the enemy Sept. 9th, 1863, I arrived after due preparations on Friday morning. I was there handed an order from Surgeon Perin, Medical Director, to make requisitions for the necessary supplies for establishing hospitals for 3,000 beds, and to fit up the buildings which had been erected by the Confederates for the reception of wounded.

I found a scant supply of bedding and hospital supplies for about 800 beds; bedsheets, but no hay or straw to fill them; no bunks or cots; no cooking vessels, except some camp kettles and mess pans which were brought up from Bridgeport in my wagons.

The buildings designated as hospitals consisted of thirteen wooden pavilions, five of which were two-storied, all without doors or windows or any appurtenances, they having been completely stripped by the Confederates before abandoning the place. The buildings were capable of accommodating about 50 patients; there was also a brick building, formerly a school-house, with two large rooms capable of holding about 40 or 50 more. A small building, capable of accommodating 120 to 140, without doors or

windows, and built as a reception ward to the main hospital, constituted all that could be considered as suitable for the purpose.

Another set of buildings on the outskirts of the town, built as an hospital, were not available, and were subsequently burnt down, being in line of fire from our guns.

The army was in line of battle, stretching from seven to fourteen miles in front, and in momentary expectation of a clash with the enemy, and, in fact, heavy skirmishing was going on during the afternoon.

I obtained an order from the commissary officer of the post, General Wagner, to take possession of any buildings, furniture, cooking utensils, &c., that might be required for the establishment of hospitals. On riding through the village I found several large storerooms and lofts on the main street which could be used as wards, and also one or two large private residences, which were taken possession of; and cooking apparatus was obtained. The Crutchfield Hotel, comfortably furnished, would also, if necessary, furnish quarters for 200.

On *Saturday, 19th*, the battle commenced and raged from right to left; towards afternoon the slightly wounded began to find their way in with innumerable stragglers. I received a note from the medical director directing preparations for the reception of 2,000 wounded. I could not make any further arrangements than those already provided with the very limited means at my disposal. The wounded, as they arrived, were fed and cared for, and such surgical operations performed as were necessary.

On *Sunday, 20th*, the battle was renewed with terrible fierceness on both sides, and resulted, as is well known, in disaster to our arms, the whole army only being saved by the invincible bravery of our men, led by Gen. Thomas on the left, who withstood the shock of overwhelming numbers.

All this day and the following night and next day the wounded kept pouring in, on foot and in ambulances. They were distributed to the hospitals, hotel, storehouses, private houses, until every nook and corner in the town was crowded. As medical officers were constantly arriving from the field they were put on duty.

On *Monday, 21st*, six divisions of the general hospital were organized with medical officers, dressings, medicines, and rations. The wounded, however, lay upon the floors, without any comforts, in their dirty clothes, with hardly a blanket to put under or over them. Their wounds were dressed and most of the necessary operations performed either by myself or other surgeons.

Two large private residences were converted into hospitals for officers, and were soon filled with about 200. As near as could be estimated, four thousand reported and were fed, and attended to as well as circumstances permitted. Over two thousand of the worst cases, with the field hospitals, tents, medicine wagons, and some fifty medical officers, had fallen into the hands of the enemy as they swept back our right wing.

On *Tuesday*, 22d, our army was in line, immediately in front of the town, expecting a renewal of the conflict. All the available ambulances and wagons were loaded with wounded, and, with such as could make their way to the rear on foot, were hurried across the pontoon bridge. Nearly all the officers and some twenty-five hundred men were dispatched, and only the worst cases detained, as also all the wounded prisoners, of whom there was a large number. All the wagon trains were crossed and every precaution adopted if a retreat had been necessary. It was determined to leave the worst wounded, and I was detailed with a number of assistants to remain in case of the final emergency.

The enemy, however, had suffered as severely as ourselves in killed and wounded, especially in officers of a high grade, and so far from renewing the battle, actually retreated; but finding that the field was abandoned by us, they reoccupied it and advanced to within a short distance of the town, where constant cannonading and skirmishing occurred for several days and nights. According to the best information, our forces amounted to about fifty-five thousand, while the enemy had at least seventy thousand. Our loss was: in killed, one hundred and twenty-five officers and four thousand one hundred and seventy-one men; in wounded, six hundred and twenty-four officers and nine thousand five hundred and ninety-two men—making the entire loss thirteen thousand seven hundred and sixty-three.

It is ascertained, beyond a doubt, that the rebels suffered equally in killed and wounded; so that the total loss on both sides would amount to over twenty-seven thousand five hundred, rendering the battle of Chickamauga the bloodiest of modern times, in proportion to the numbers engaged. Thus, if our numbers are correct, out of one hundred and twenty-five thousand men engaged, one in every four $\frac{5}{16}$ was killed or wounded.

At Solferino, where nearly 300,000 were engaged on both sides, 37,800 were struck by bullets.

During the three days' battle at Waterloo, the total loss of the English army was 8,000, while at the Crimea the loss of the British was 14,849—during its entire campaign—of whom 12,094 were wounded and 2,755 killed in action.

M. Serive, of the French army, gives as the number wounded by gunshot from September, 1854, to July, 1856, in an averaged strength of 145,000 men:—

In officers	1,625	Enlisted men	35,912
Killed "	325	"	7,182

making a grand total of 45,034 killed and wounded during a period of twenty-one months, including several general engagements, and the final assault of Sebastopol.

A few days had sufficed to get our hospitals in good working order, and though we were poorly provided, yet we had obtained additional supplies

from the reserve wagons of some of the corps which had escaped the enemy. We had no luxuries in diet, and but a moderate quantity of stimulants. The Sanitary Commission, with its usual promptness and efficiency, provided us with muslin for dressings, underclothing, and some luxuries, but their stock, being limited, was soon exhausted. On the 27th the medical director converted several of the buildings into division hospitals, leaving only the division known as No. 1, the Crutchfield Hotel, known as No. 3, and the officers' hospital under my direction. This led to great confusion, as the wounded were indiscriminately placed in all the buildings, and, in the desire to separate them, men were moved from place to place greatly to their prejudice, while others could not be removed at all, so that division directors often had as many of others as of their own under their care. Again, wounded coming in were obliged to drive from place to place before being provided for. After a few days another change was made; another building, known as hospital No. 2, was turned over to me, with its medical officers and all the wounded from the several division hospitals were turned over to the general hospital. We had been able to get our bedticks filled with cotton, making very comfortable mattresses; and bunks were being made as rapidly as the quartermaster could procure lumber. The food consisted of the army ration, including a fair supply of fresh beef. An agreement having been entered into between the commanding generals for the exchange of wounded, a large number of ambulances were sent to the lines, and on the 29th nearly a thousand arrived, who were so badly wounded as to be unable to escape from the hospitals in the field. These poor fellows presented a sorry sight; many had not had their wounds dressed, which were consequently in a miserable, maggoty, filthy condition. The majority had been robbed of money, blankets, canteens, and jackets by the enemy, had been very scantily fed, and even the food sent by our commissary for them was partly diverted to other purposes.

Oct. 2. Another train brought in about twelve hundred wounded, most of them the most serious of surgical injuries, and in a still more deplorable plight than the others. As many as could be, were admitted into the general hospital, some into the division hospitals, and the rest into a field hospital, composed of tents, which had been put up on the south side of Tennessee River, and which was under a separate administration, and served as an entrepôt to those who started on their way to the rear.

I am satisfied that the plan of having division or corps hospitals after a battle is wrong in theory, and almost impossible in practice. It has been contended that the wounded are better attended to by their own medical officers than by strangers, but how rarely does a man fall under the care of his own regimental surgeon? The service in division hospitals is performed by medical officers detailed at large from the regiments composing the division, and they are thus detached from their regiments, which, in case of an advance or any strategic movements, are often many miles away.

Again, when large numbers are wounded, and are picked up on the field of battle, especially where the movement of troops has been rapid from flank to flank, the men of the same division may be strewn over the whole field, and it would be unwise to attempt to call out the different divisions and remove the wounded to their special hospitals. I have never seen this carried out successfully, but, on the contrary, it has usually led to endless confusion.

Again, no reliable or valuable record can ever be derived, when men are removed from hospital to hospital. After an engagement, one general hospital, under the charge of a surgeon-in-chief, of acknowledged administrative and surgical ability, should be established; this may be divided into any number of divisions, but all the reports, records, returns, and changes, should be controlled at the bureau or office of the chief surgeon. This gives harmony and unity to the whole. Certain accidents may be conveniently grouped under surgeons who are known to be particularly interested in them; greater attention and skill are thus often obtained than under other circumstances; reliable and valuable statistics may be accumulated; a far greater economy of medical officers, and medical supplies can be attained, and whatever is furnished of comfort or luxury, is equally distributed to all. There should be a quartermaster and commissary specially detailed to procure and furnish the necessary supplies in their respective departments, and the medical officers should not be required to devote their time, at this important moment, to hunting fuel and water, or, perhaps, killing their own beef, or rather the beef they find nearest at hand. There are numerous duties connected with the quartermaster's department, upon which the welfare and comfort of the wounded greatly depend, and if earnestly and cheerfully performed, greatly lighten the labours of the medical department.

Under the present organization, the surgeon in charge of a general hospital is commanding officer, as far as military jurisdiction requires; he is adjutant, quartermaster, commissary, ordnance officer, and, in many cases, has a command equal to a brigade; yet Congress and the country have not thought proper to increase the rank or pay of medical officers, however great or important the extent of their duties. I am not disposed to enter upon this subject, because, I regret to say, the course of medical officers in some cases has not been such as to win respect and confidence. Many ignorant and improper men have been admitted into the medical staff; the highest order of talent has not been procurable under the small compensation allowed, and political influence has entered too largely into appointments and promotions.

Occasional cases of wounds occurring on picket or reconnoisances, were admitted during the early part of October, and on the 29th the battle of Lookout Valley took place, in which the enemy was dislodged from import-

ant positions commanding the river and roads. In this engagement there were about one hundred and fifty wounded, a portion of whom were brought to the general hospital. Thus, almost as fast as we could send the wounded to the rear, their places were filled by others, keeping our hospitals almost constantly full. Indeed, so crowded were they for several days, that I greatly feared the appearance of gangrene and erysipelas, but, the wards having no doors nor windows, there was full ventilation; and the air could not become stagnant or mephitic, for a wind blew through every aperture night and day. The weather was dry and mild, but filled with clouds of dust until Sept. 30th, when rain set in towards evening, and fell in large quantities for two days, after which the temperature became cooler, but pleasant. Rain set in again Oct. 7th, but cleared after a few hours, and again on the 13th, and continued for three days, after which the air was pleasant; again on the 24th and on the 30th rain came down in heavy showers. The temperature during the nights was cool, and there being no means of heating the wards, our wounded complained of chilliness, but by hanging blankets on the side from which the wind blew, we were enabled to shelter the men without closing all the windows and doors; and to this circumstance we are no doubt greatly indebted for the comparative immunity from diseases of a low type. Very few cases of hospital gangrene or erysipelas occurred, and they readily yielded to treatment. We were able constantly to add to the comforts of our wounded, and they could not have fared better. We were at times scantily supplied with fresh beef and vegetables, and many of the delicacies, but this resulted from the destruction of a large wagon train by the enemy's cavalry, while on its way to the post, with a large supply of medical and sanitary stores. Though the army was for a short time on quarter rations, yet our wounded obtained a full share of the essential articles; occasionally they complained of insufficient food, but wounded men in a condition of convalescence always demand extra rations. We were able to obtain fresh bread nearly every day.

I must allude to the character of the surgical aid afforded us, after this battle. Men were sent from the North, from Missouri, Indiana, Kentucky, and elsewhere, who had been serving in hospitals, but who had no experience whatever in surgical practice. A delegation of twelve were sent from Indiana, only one of whom ever did duty, and he only for two days. More than one did not even know how to apply bandages. A most radical error is committed in sending to the battle-field civilians indiscriminately picked up, most of whom are inexperienced in military surgery, thus inflicting positive wrong upon the wounded soldier, whose greatest consolation is, that if he is wounded, he will be skilfully treated. These civilians, strangers to military customs, are troublesome and exacting; at a loss to take care of themselves, and do not enter upon their duties with that earnestness that is required; it is almost impossible to obtain from them written notes of important cases. Only those who are of known surgical ability should be

assigned to the important duties falling to the share of any army surgeon after a severe battle. Such officers are often allowed to remain in hospitals far in the rear, where the slightest cases only reach, and which require an inferior amount of skill. The severest cases, calling upon the highest attributes of an accomplished military surgeon, are necessarily detained in hospitals near the battle-field, and here the oldest and most experienced officers should be found.

While I speak thus of several, who reported to me for duty, I must, in justice, award what is due to the regimental officers who served in the hospitals with few exceptions, and to a few contract physicians, who performed their duties earnestly and well. Most of the regimental surgeons, however, returned to their regiments, and their places were supplied by acting assistant surgeons, as they arrived.

Early in November, all but the severest cases, amounting to about five hundred, had been sent to the rear, and as our principal hospital had become untenable, from the fact of its vicinity to one of our works, and having been struck by a shell, the patients were removed to the upper portion of the town, near the river, and it was arranged that all the cases should be transferred to Murfreesboro', where they would obtain the comforts necessary to their ultimate recovery. I was ordered to that post, in order that I might carry out the treatment in certain classes of cases, and complete a series of statistics on certain accidents, which I had accumulated. I regret to say, that this object was not accomplished; very few of the cases ever were sent to me, and consequently my labour in taking the notes of five hundred cases of the most severe character was rendered entirely useless. By this unnecessary scattering of interesting cases—the surgeon who has first charge ceasing to follow them to their final result—the only reliable means of obtaining valuable statistics are lost. Statistics are, at best, of little value, unless all the cases are treated under the same character of surrounding circumstances, but where surgical attendance, climate, different degrees of comfort, long and fatiguing transportation, irregular food, exposure to vicissitudes of day and night temperature, come in as disturbing causes, the rates of mortality are fearfully altered, and no true comparison can be made. Thus, in knee-joint cases, the result of those brought immediately to the hospital, those remaining on the battle-field for ten or twelve days neglected, and those in their inflammatory stage, driven in ambulances to the hospitals, and those again promising well, being put in cattle cars and rattled a hundred miles or more over a bad road, will hardly do to collect together, so as to determine the best course to pursue.

The hospitals not being organized previous to the battle there were no surgeons, stewards, clerks, or attendants to do the necessary work, and for nearly a week it was impracticable to register the names and wounds of

those coming in, or keep any accurate accounts of the surgical operations. For three days, I operated continually in all the hospitals, and the medical officers on duty also performed several operations. All the lighter wounded were sent across the river as soon as the necessary operations and dressings were performed; hundreds of balls were cut out from time to time, also grape-shot and fragments of shells, without any record being made. At least four thousand came to the hospital, out of which twenty-five hundred were considered capable of being sent to the rear. Nearly all the officers were sent in the first train of ambulances, as it was supposed that the enemy would follow and shell the town from the neighbouring hills which commanded it, and as a retreat of the whole army might thus become necessary, the commanding general was anxious that every wounded man should be hastened to the rear, if it were practicable, so that as few as possible should remain to fall into the hands of the Confederates as prisoners. Many were consequently sent who would have fared better to have remained, and several necessary operations were deferred until the officer or man should arrive at a safe place.

The enemy not having renewed their attack, a few days brought out attention to the administration of affairs, and my charge having been very much diminished by the establishment of division hospitals, I was able to collect the names and character of wounds of those in the hospital, and a few who had been sent to the rear, and most of those who had died, though I must be candid in admitting that there are very many unavoidable errors in the following statement of gunshot wounds.

The record embraces from September 20th to November 1st. Those received during the month of November are not included, I having been relieved from duty on the 15th; thus the period consists of a record of forty days; one of the most anxious and sad eras in the history of the Army of the Cumberland. Depressed by defeat, on half and quarter rations, exposed to heat and dust, or cold and rain, with only the shelter of their d'ebri tents, their uniforms in rags, many barefooted, the rear threatened, and even supplies cut off for a time, this brave army stood ready, in the presence of superior numbers, again to contest the possession of Chattanooga.

During this season of trial I never once heard a groan or complaint from wounded or healthy; all bore their deprivations with the truest spirit of patriotism. I cannot say too much in praise of this gallant army, with which I have been serving just one year.

There were received into the general hospital, consisting of three divisions and the officers' hospital, during the forty days, nineteen hundred and four cases, whose names and wounds were duly recorded and presented in the following—

Statement of Gunshot Wounds received at Chickamauga and other Fields near Chattanooga, during the months of September and October, 1863.

			No. of cases	Amputation ^s	Excisions,	Sent to Gen. Hosp. in rear	Died.
FLESH WOUNDS.	Of head		49	...	...	40	1
	neck		40	...	...	28	2
	thoracic parietes		68	...	...	50	3
	abdominal parietes		26	...	...	9	5
	back		38	...	...	21	6
	external genitals		8	...	...	1	...
	upper extremities		210	...	...	186	4
	lower extremities		647	...	...	595	10
	Of brain		7	...	...	...	2
	lungs		67	...	...	18	24
WOUNDS OF CAVITIES.	heart . . . . .		...	...	...	...	...
	other wounds of thoracic cavity		13	...	...	2	9
	stomach . . . . .		...	...	...	...	...
	intestines		6	...	...	2	1
	bladder		2	...	...	...	1
	other wounds of abdominal cavity		32	...	...	8	9
	Of cranium		11	...	...	1	6
	lower jaw		15	...	...	1	4
	facial bones		16	...	...	1	...
	clavicle		3	...	...	1	...
GUNSHOT FRACTURES.	scapula		13	...	...	13	6
	humerus		60	22	5	3	16
	forearm		44	1	3	17	2
	lower third		36	1	...	3	17
	femur { middle third		60	3	3	7	22
	{ upper third		55	1	...	...	34
	leg		106	17	5	28	18
	ribs		4	...	...	2	...
	vertebrae		14	...	...	2	4
	other bones		54	3	...	33	1
WOUNDS OF JOINTS.	Of shoulder-joint		18	...	...	...	1
	elbow		23	...	3	12	2
	wrist . . . . .		...	...	...	...	...
	hip		17	...	...	1	13
	knee		65	...	...	...	28
	ankle		27	...	...	7	5
	other joints		3	1	...	...	...
Contusions and injuries by spent balls				47	...	...	1
Total				1904	49	19	1092 273

Notwithstanding that our wounded were comparatively well housed and nourished, yet the cold and wet weather evidently depressed their vitality; while the necessity of closing up windows and doors interfered with a thorough purification of the wards, and thus, about the 15th of October, cases of hospital gangrene, erysipelas, and pyæmia began to occur. We lost many of our amputated from apparent exhaustion and inability to bear up against suppurative action. We had no luxuries, such as eggs, milk, fruits, and chickens, to tempt the failing appetite, which rejected salt

pork or beef; and no butter to tempt men to their bread, which they often refused. There was a scant supply of fresh vegetables, which I look upon as an indispensable article of diet for the wounded, as a scorbutic tendency is usually induced by their want, which retards or prevents reparative action at a time when it is called for in its healthiest degree. Good malt liquors are greatly to be desired, and are better than whiskey, which is often nauseous to delicate appetites. Canned milk should be added to the list of hospital stores, and allowed in full quantity. It forms the most nourishing food, and can be used in so many agreeable ways, combined with stimulants and farinaceous articles, with coffee and tea, as to add very much to the comfort, support, and ultimate recovery of bad cases. We were indebted to the Sanitary Commission for a moderate supply. Beef-essence and canned soups should also be supplied in full quantity. I verily believe that if half the money spent in drugs allowed by the supply table was expended in wholesome dietetic articles, our sick and wounded would fare vastly better, and many a life be saved.

I cannot allow the present opportunity to pass without noticing the great and palpable omission of all arrangements for the administrative service of general hospitals in our army. With few exceptions, the hospital stewards are an inferior class of men, ignorant of their duties in times of emergencies, careless and rough in their behaviour, not unfrequently intemperate and dishonest. The attendants are mostly the cowardly runaways from the battle-field, who are eager for an excuse to desert their posts, and avail themselves of the first opportunity to get to the rear and offer their services to the surgeon. The latter, finding himself without clerks, wardmasters, nurses, or cooks, is glad to put these men in those positions; but when the first confusion has subsided, these men are demanded by their regimental officers, and their places are not filled at all, or only filled after long delay, and then by the most worthless men, whom the company officers are glad to get rid of. After the battle of Chickamauga it was with the extremest difficulty sufficient men could be obtained to perform the most essential duties about a hospital. There was a constant angry correspondence between line and medical officers, and it was only after an order was issued by the general commanding, that all men on duty in general hospital should remain there for the present time, that brigade and regimental officers ceased sending guards to forcibly take away nurses and cooks.

It is surprising that a corps for special service in general hospitals has not been or is not organized. If at the present date, after three years of war, we have attained to an organized ambulance system, it is hoped that a hospital corps will soon be thought of.

In addition to the other diseases usually occurring, under adverse circumstances, in military hospitals, I have to add five cases of tetanus, of which

I have the notes, and which, to the best of my knowledge, were all that occurred in my service.

CASE I. Richard Leaming, Co. E, 87th Indiana, received flesh wound of right nates, Sept. 20; was brought to hospital same day; the ball was lodged in the muscles of the part, and, as there were no unusual symptoms, it was not disturbed. He remained comfortable until the 27th, when tetanic rigidity of the jaw set in, followed by opisthotonus, which became severe, and lasted thirty-six hours, when he died. He was treated by brandy, opium, and chloroform inhalation. The last only served to control excessive spasm.

CASE II. Wm. Benboe, Co. A, 39th Indiana, was wounded in the left elbow-joint, Sept. 20, and brought to hospital. The injury was so extensive that amputation was performed next day. He did well until Oct. 2, when he was seized with tetanus, which continued forty-eight hours, when he died. Same treatment as above.

CASE III. E. M. Padden, Co. F, 9th Kentucky, received a flesh wound through upper third of right thigh, Sept. 19, and was brought to hospital next day. Tetanic spasm set in on the 29th, at first chiefly confined to the wounded limb, but becoming general, with very marked trismus. He died after twenty-four hours of suffering. The same treatment pursued.

CASE IV. C. F. Flepp, 2d Missouri, received gunshot flesh wounds through the right shoulder and hip, Sept. 20, and was brought to hospital next day. He presented no unusual symptoms until Oct. 1, when tetanic spasms set in, and lasted for three days, when he died. Same treatment pursued.

CASE V. John Droster, Co. B, 9th Ohio Volunteers, received a flesh wound through right thigh, near the groin, Sept. 20. He was left in hospital on the battle-field, in the hands of the enemy, until Oct. 2, very much exposed to cold and wet, and with insufficient food. He was sent in with other wounded, and tetanic symptoms set in the same day. There was slight trismus and spasm of the wounded leg and thigh, which continued constantly increasing in severity for ten days, and finally terminated in marked opisthotonus. There were times when he ate well, and slept soundly for hours, and it was thought he would recover; but, in spite of enormous quantities of whiskey, opium, and chloroform, he died after ten days' agony.

Now, what is the cause of tetanus, and in what kind of wounds is it most frequent? We must acknowledge our total ignorance of its etiology, pathology, and therapeutics. We are only familiar with its symptoms.

It has been laid down by some authorities that the retention of balls or fragments of foreign matter in the vicinity of the nerve tracts is an exciting cause, but this is not borne out by the general history of cases, and occurred in only one out of our five cases; nor does it depend upon the severity of the wound, whether involving soft parts or bony tissue, bloodvessels, or nerves. Nor is it more frequent in wounds of any particular parts of the body. I have seen it produced by an insect "jigger"

getting into the feet. Neither does climate at all contribute to its frequency. Sudden changes from hot to cold, or the reverse, have certainly produced many cases, both in India, in Germany, and in the Crimea, especially in those who lay on the battle-field at night. Yet opposite extremes of heat and cold alone will produce it. Thus, in India, Africa, and the equatorial climates of America it is very common; while Dr. Kane informs us that he lost both men and animals from the same disease in the Arctic regions. There are certain localities in the temperate climates where it appears to have prevailed as an epidemic; this I have understood to be the case at a small village on the south side of Long Island, and where it was firmly believed salivation was a certain cure, though many died before it could be brought about.

In our cases, four were comfortably housed and cared for, and yet were the most violently attacked, while the fifth case, which was exposed to wet, cold, and bad food, was but mildly affected, and even promised recovery.

Fortunately, the number of cases occurring after a battle are few, for they are almost universally fatal. Various remedial methods have been resorted to by as many surgeons, but no one remedy has ever succeeded in a sufficient number of cases to become popularly adopted, and all authorities have reluctantly fallen upon the plan of overwhelming insensibility by the intoxicating influences of whiskey, opium, and chloroform. As long as the effects of these are kept up, the patient suffers less, sleeps some, and is comparatively free from spasm; but diminishes the effect, and all the symptoms recur with increased vigour. Consciousness is often active until the last, but generally they become comatose or insensible to all external agents for several hours before death.

Our cases were attacked severally on the seventh, twelfth, ninth, tenth, and twelfth days, or averaging on the tenth day, and this is the usual period; but it has occurred as late as the twenty-first day.

No *post-mortem* examinations were made in any of the above cases; but from former examinations, and the record of other surgeons, nothing satisfactory has been found. Occasional redness, congestion, or slight softening of the spinal cord has been observed, but may these not be as well attributed to the effect of violent spasmodic action?

Of flesh wounds there were one thousand and eighty-six, being more than one-half of the whole number reported. There was nothing of interest in these beyond the vagaries found in the course of balls, such as the hole of exit being found at unusual distances from the wound of entrance, the ball having described curves or being turned in new directions by fasciæ. There were thirty-one deaths in this class, by tetanus, erysipelas, exhausting discharges from extensive shell wounds, &c.

Of the seven cases of wounds of the cavity of the cranium only one presented any point of interest.

H. C. Pierce, Co. B, 33d Ohio. Ball entered at outer side of left superciliary ridge, passed directly through the head, and out in the right temporal region, half way between the eye and ear; both eyes destroyed, the right protruding outside of orbit; patient is perfectly insensible; breathing ster torous; pulse 132, quick; is very restless, throwing his limbs about, and uttering loud cries. Wounded Oct. 27.

Oct. 28. Recovered his senses so far last evening as to be able to give his name, company, and regiment, and this morning answers questions intelligibly, but rather indisposed to talk; says he has some pain over the forehead; protrudes his tongue, which is dark.

Became comatose next day, and towards evening died. On removing calvarium, the ball was found to have entered the left temporal bone, passing up through the orbit behind the globe of eye, severing the optic nerve, fracturing the bones, through the sphenoid, upwards and through the right orbit, destroying the globe, and out at right temple. The under surface of anterior lobes of brain very much lacerated; thin layer of pns beneath the arachnoid membrane; cerebral vessels very much congested.

It is remarkable that, with so extensive an injury to the brain, he should have a return of consciousness and intelligence. I conversed with him, and his answers were slow but correct, and he expressed a desire for some particular kind of food.

Other injuries of the calvarium occurred, where fracture and some depression existed, yet without producing symptoms sufficient to call for trephining.

During the second day of the admission of cases, while operating upon some of the minor cases which could be attended to in the office, a man was brought, led by another, and placed in the chair. He had a staggering gait, was rational, but a little confused, and was evidently labouring under some concussion. On examination, I found the skull depressed and comminuted for the size of a twenty-five cent piece, driven into the brain, some of the substance of which came out with the loose pieces which were carefully removed; this was near the sagittal suture and in the right parietal bone. After the operation he got up and walked away. As there were no alarming symptoms he was sent to the rear.

Another case presented himself in the ward, the subject of it was a man sitting up near the fire and complaining only of slight headache and confusion. A depression of the size of a nickel cent existed in the anterior portion of the parietal bone on the right side. He eat and slept well, and was finally sent to the rear after ten days.

Sergt. Pfeff, 101st Indiana Vols., was struck in the head, Sept. 20th, by a minié ball, which passed through his felt hat, at the posterior and inner angle of the left parietal bone and glanced off. The blow knocked him down, without depriving him of his senses. Not a bad symptom followed. The bone along the track of the ball for an inch and a half, including the whole thickness of the skull, exfoliated. He was sent to the rear six weeks after the accident.

Gunshot Wounds of Head and Face.—Balls are driven through the bones of the head or face, tearing and crushing, producing frightful de-

formity of the human countenance, and yet few are fatal unless their track is so near as to produce secondary hemorrhage from sloughing of blood-vessels. Among the thirty (about) cases of wounds involving the bones of the face brought to us, a few presented an unusual interest. They were of the severest and most disfiguring character, and yet rapidly recovered. One died of secondary hemorrhage, after all apparent danger had passed.

Private Wm. Farr, wounded at Lookout Mountain, Oct. 28th. The ball entered on the left side of the face, just behind the angle of the inferior maxilla, passing directly through and out at the corresponding point on the right side, wounding the tongue and palate.

He presented a most pitiable sight. The mouth was wide open; the tongue protruding to its utmost extent and very much swollen; the saliva running, and all attempts to articulate or swallow impossible. It was decided that little could be done, except to make him comfortable; it was natural to believe that increased swelling would suffocate him, or that hemorrhage would set in.

On the next day we managed to introduce some fluid nourishment by means of a stomach-tube, which appeased his thirst and craving for food. This was continued, and, contrary to all hope, he began to get better; the tumefaction of the tongue gradually subsided, he breathed better, and enjoyed his food, which was still administered by tube. After twelve days he was in good enough condition to send to the rear. He was sent to hospital in Murfreesboro, where I had the pleasure of seeing him entirely recover.

Private Penzel was wounded Sept. 19th, the ball entering his mouth, while open, passed through the posterior wall of the pharynx, and out on the left side of the fifth cervical vertebra behind, without injuring teeth, tongue, or palate.

In the case of Private Van Waters, Co. G, 111th Penna. Vols., a ball entered at the superior angle of the left scapula, passing through the shoulder superficially, entering one and a half inch below the mastoid process, passing inward and upward through the superior maxilla, inside of the angle of the inferior maxilla on the left side, and out just below the inner angle of the left eye. Severe hemorrhage occurred immediately afterwards. The wound was received Oct. 28th, and he steadily went on to a cure, and one month afterwards was sent to the rear nearly well.

Private O'Connor, Co. H, 18th U. S. Infantry, wounded Sept. 20th. The ball entered just below the zygomatic arch on the left side, and passed out on the opposite side a little below the angle of the inferior maxilla. Nothing of interest occurred until Oct. 2d (twelve days), when hemorrhage set in from the wound of exit and into the mouth. This was suppressed, but recurred on the 4th, and ligation of the external carotid was performed by Surgeon Cleary, U. S. V. He gained rapidly and promised a speedy recovery until the 12th, when slight hemorrhage recurred, which ceased upon pressure being applied, and he again progressed to an almost entire healing of the wound, when, on the 23d, profuse hemorrhage set in, and he lost so much blood that I applied a ligature to the common carotid within an inch of the origin. This seemed to control the hemorrhage; the same night, however, it recurred, but was controlled by a compress. He was so

exhausted, however, by loss of blood and inability to take food that he died on the 25th.

This last case exhibits the most dangerous accident liable to occur in these wounds about the face, and warns us against giving a hasty prognosis. We are never safe until after twenty-one days or thereabouts, after which we seldom or never meet with this unhappy occurrence. Hemorrhage often takes place so unexpectedly that death occurs before surgical aid can be afforded. I had a soldier who was walking about and eating as well as ever, and though warned that there was still danger, he could hardly appreciate the fact. About three weeks subsequent to a wound near the internal carotid, he was smoking his pipe at the window after a hearty dinner, when suddenly a gush took place into the mouth, and before I could reach him, and in less than ten minutes, he was dead.

In the case of an officer of the Rifle Regiment (3d cavalry), wounded by an arrow in the abdomen, in an Indian fight, death occurred in the act of sitting on a stool, after he had been considered out of danger. The aorta had been slightly touched and the cicatrix gave way.

The relation of the above cases is interesting clinically, as giving an outline of this class of cases, showing how the most severe get well without a bad symptom, while cases which seem no longer to afford surgical interest suddenly call for prompt, energetic, and skilful interference. It is remarkable how rare secondary hemorrhage occurs. I am unable to give the exact number in our hospital, but I find the following record of

LIGATURES OF ARTERIES.	External carotid . . . 1	Died . . . 1
	Common " . . . 1	" . . . 1
	Femoral " . . . 7	" . . . 5
	Popliteal 1	
	Intercostal (4th) . . . 2	" . . . 1
	Total, 11	8

Other cases occurred where no operation was performed in consequence of the seat of the wounds.

Hemorrhage used to be greatly feared, in olden times, and it has been recommended that every officer and soldier be supplied with a tourniquet, and even during the Mexican war many carried them, but the danger is entirely overestimated. I doubt if many perish on the battle-field from hemorrhage alone, and we rarely meet it afterwards until from the eighth to the twenty-fifth day. I knew it once to occur six weeks after injury.

In these accidents, if we can reach the wound, the true rule is to tie the artery above and below, if not on the proximal side near its origin, or in stumps by opening them and following up the artery to a healthy point. At best the success is not flattering. We lost eight out of eleven cases—five out of seven cases of ligation of the femoral. The French, in one hos-

pital at Constantinople, lost all their cases, seven. None of the statistics are satisfactory, and their recital would be of no value.

Gunshot Wounds of Lungs.—No class of cases is more interesting to the surgeon than gunshot wounds of the lungs. Involving so important a vital organ, and frequently most alarming in their character, we are yet happy in knowing that, with care and judicious treatment, about one-third or more can be saved.

Sixty-seven cases are recorded in our report, out of which, at the end of fifty-five days, when all danger was supposed to be at an end, there had been twenty-four deaths—about 37 per cent. I have written notes of eighty cases, out of whom twenty-eight died, or 35 per cent.

These cases include those of the greatest gravity, and others where it was doubtful if the lungs were materially injured, judging from the almost complete absence of alarming symptoms. The fact that the men spit blood immediately after being wounded, and for some little time after, decided us in classing them as lung cases; yet this is by no means a positive diagnostic test. Dr. Frazer states that out of nine fatal cases observed by him in the Crimea, in which the lungs were wounded, only one had haemoptysis; and out of seven in which the lungs were found not to be wounded, two had haemoptysis. But this statement is not in accordance with the experience of most military surgeons. Decided hemorrhage from the mouth, immediately after being wounded, is a pretty true indication. Of course, when blood and air pass through one or both orifices of the wound, there can be no doubt; but this is not usual in the majority of cases.

It has been claimed by Dr. Howard that hermetically sealing up the orifice of the wounds is the best treatment. This does not accord with my experience. Since October, 1862, I have particularly noted this class of wounds, and very near one hundred cases have been treated in the hospitals under my direction. The course pursued has been absolute rest in a comfortable position, usually semi-recumbent; a pledget of two or three thicknesses of lint, saturated with cold water, covering the wounds; sometimes a roller around the chest, sufficiently tight to control the motion of the ribs; occasional venesection, where active inflammation set in, in robust plethoric subjects; depressants to arterial action, verat. viride, digitalis, tart. antimon., and opium. Emphysema is not usual in gunshot wounds; it is more frequently observed in punctured wounds. Where internal hemorrhage occurs into the pleural cavity, the patient almost invariably dies, and I doubt the propriety of enlarging wounds or making new incisions to evacuate clots.

We subjoin brief histories of a few cases presenting alarming wounds, in which recovery took place without any bad symptoms:—

CASE I. A. J. Fillinger, 18th Ohio Battery. The ball entered four inches above the left nipple, opposite the cartilage of the 4th rib; passed through

and out two inches behind and below the posterior edge of the axilla. He spit blood when wounded, and for some days after; air passed through both openings, with copious secretion of muco-pus from mouth and wound. He entirely recovered.

CASE II. Priv. Larkin, Co. I, 2d Kentucky Cavalry. Ball entered outside right nipple; passed through and out at posterior and lower angle of scapula. He spit blood freely. Twenty-four days after being wounded the orifices were healed, and he had a copious purulent discharge from the mouth, through the bronchi, from the pleural cavity. The discharge continued for some days. He finally recovered entirely.

CASE III. J. C. Batterman, Co. G, 100th Illinois. Ball entered below the centre of the right axilla, passing backwards and out near the articulation of the 9th rib with vertebra, causing fracture. He spit blood freely, and air passed from the posterior wound for six weeks. He recovered, and went on furlough Nov. 30.

CASE IV. John Geiger, Co. K, 9th Ohio. Ball entered just below the left clavicle and first rib, passed through and out posteriorly on the right side, near the posterior edge of scapula. He remained ten days on the battle-field. Expectorated blood very freely. Sixty days after receiving the wound he went on furlough.

CASE V. Michael Murphy, Co. H, 1st Michigan. Ball entered the centre of the left clavicle, fracturing it; passed through downwards, and out about the centre of the scapula on same side. He bled freely from the mouth, and air passed out of the anterior wound. November 20 he had entirely recovered.

CASE VI. Joseph Moore, Co. G, 26th Ohio. Ball entered just below the sternal end of left clavicle, passing downwards and out below the lower angle of left scapula. Spit blood from mouth, and bloody, frothy menses came from the anterior opening. He lay twelve days on the battle-field, in the hands of the enemy, where the only remedies were cloths dipped in cold water. On being admitted into hospital, the same treatment, with low diet and sedatives, was followed. He recovered, was removed to Murfreesboro', and furloughed Nov. 30.

CASE VII. Charles Reed, Co. H, 125th Ohio. Ball entered between the 4th and 5th ribs, in front, on the right side, and lodged. He spit blood freely, and air passed from the wound on expiration. He recovered under proper treatment. On Dec. 5 I saw him again at Murfreesboro', doing well. The ball, evidently in the lung, gave him no uneasiness.

Gunshot Fractures of Femur.—There were received of gunshot fractures of the femur, of

Lower third, 36, of whom 17 died during the first two months.

Middle	"	60	"	22	"	"	"
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Upper	"	55	"	34	"	"	"
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	151		73
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The greatest number of these cases had been prisoners in the hands of the enemy for ten or twelve days, perfectly neglected, and were in a most shocking condition when admitted. Amputation should have been performed primarily in a great number of these cases. The limbs were out of shape, bones comminuted and often protruding, the wounds filled with a bloody purulent matter, and the general condition such as to render secondary operations of no value. The chances of life were too small even to propose it. All the operations performed at this period proved fatal but one. Those performed on the field, or within two days after the battle, were more successful. It would be of no value to give any more than a notice to these cases, inasmuch as very many passed from under my care at the end of two months. Although many more died, yet many were saved, and I now have five or six cases in hospital at Murfreesboro', who have so far recovered as to walk about, with firm union of the bone.

I am satisfied that our surgeons of this army will testify to many cases of good recovery, both after this campaign and that of Stone River.

The results in similar cases occurring in the English and French armies in the Crimea were most unfortunate. "Only fourteen out of one hundred and seventy-four cases of compound fracture among the men, and five out of twenty among the officers, recovered without amputation being performed." Roux mentions having seen twenty-one cases at Toulon.

What gives such wounds so terrible a mortality? It is the terrible shock to the general system, and destruction to the largest bone in the body. McLeod says: "The longitudinal splitting of the bone is so dexterously and extensively accomplished by these balls (conical), that, while but a small opening may lead to the seat of fracture, the whole shaft may be rent from end to end." And these fragments are so disturbed in their arrangement, and stripped of nutritious covering, lying across, penetrating the muscles, the ends of the upper and lower fragments of the bone drawn towards and riding past each other, that inflammation, suppuration, and degeneration of the bones and soft tissues take place rapidly, and a large sac forms, which is filled with a dark, unhealthy pus, in which the bones are soaking. Hectic sets in, of course, and no ordinary constitution can stand up against the drain. The best course to be pursued in the treatment of this class of injuries, is as soon as possible to examine with the finger the extent of the wound. If the bone is very much shattered, and the fragments disturbed from their natural position and attachments—if the shaft is split, especially into the joint—amputation affords the best chance. If the comminution is less, remove the loose pieces, or those not strongly attached, lay the limb in a straight position, with a cushion under the knee, and apply cold water. After eight or ten days, put up in a straight splint, without making too forcible extension, but endeavouring to bring the ends of the fractured bones in apposition, and retaining them. This apparatus I decidedly prefer to all others.

In certain cases, where the bone is fractured, with little comminution, and there do not appear to be loose fragments which would interfere with a cure, do not attempt any operation. Such cases will in large proportion get well. Under the most favourable circumstances, the period of treatment is long, tedious, and uncertain. Bed-sores and diarrhoea will often set in, requiring us to change position, and which interfere with reparative processes; burrowing abscesses present themselves along the thigh, and, after months of suffering and anxiety, the patient yields all hope, and is obliged to submit to amputation to save life. We have several such cases now in hospital, and I am happy to say our secondary operations have been unusually successful.

Gunshot Injuries of Knee-Joint.—I approach the subject of gunshot injuries of the knee-joint with much more timidity than I did a few months ago. In my report of cases which fell under my care last summer, I there stated that ten cases were admitted into hospital; that of these, three were nearly recovered, and two remained with fair chances. Time, however, seemed to diminish our hopes. Capt. Pettigrew finally submitted to amputation, and died January 7th, having suffered great pain and been reduced to a mere skeleton.

Loutenschlager died Sept. 26th, worn out by the profuse discharge; thus leaving three cases who did positively recover. Haynie passed through as a lieutenant of his regiment (10th Ohio Cavalry), a few days since (April 30th), with stiffness of the joint to some extent. He was able to ride well. Phipps is still in hospital acting as a guard, having recovered with stiffness and bent position of the joint, but which is gradually diminishing, and he is now (April 30) able to put the foot to the ground, and walks with a cane quite briskly. The other case I have lost sight of.

Sixty-five cases of this injury were brought to the hospital, of which twenty-eight died during the sixty days following. Now most of these cases were detained on the battle-field for ten or twelve days, until inflammatory and purulent disease of the joints was fully established, and the patients so worn out, that amputation was not deemed advisable except in a very few cases, which was fatal in all. A large number of these cases were so severe in the extent of injury of the ends of the bones entering into the joint, that no doubt should have existed in the minds of surgeons, as to the propriety of amputation immediately after the wound was received, but owing to the fact that our field hospitals fell into the hands of the enemy, our medical officers could not give that care which would otherwise have been afforded. Nearly all the amputations performed on the field were unsuccessful. The men died rapidly from cold, exposure and insufficient food. Those brought from the field after ten or twelve days were

transported several miles over rough roads, thus diminishing any chances of recovery.

When I left Chattanooga, there were some fifteen or twenty cases in the hospitals who promised well, but I have been unable to follow the results in their histories. Three or four cases sent to this post were seriously injured by the rough travelling in the railroad cars, yet have recovered.

While I have lost confidence in the possibility of saving gunshot wounds of the knee-joint, involving fractures of the condyles of the femur or head of the tibia, under the usual circumstances of bustle and confusion of the field, and repeated removals of wounded in ambulances to the rear, yet I still firmly believe that many cases can be saved. The cases embrace—

1. Those where the patella is fractured by shell or bullet and no injury occurs to the other bones, and where the joint is fully exposed or opened.
2. Those where the bullet passes between the patella and condyles of femur without fracture.
3. Those where the ball passes obliquely from front to rear, or the reverse, without injuring bones, but perforating the joint.
4. Those where the ball grazes the joint on either side, furrowing the bones or tearing ligaments.

If we could obtain such cases immediately after injury, place them in a hospital from which they would not be required to remove for sixty days, and provided with comforts and skilful surgical care, I am satisfied we should be rejoiced in the results.

I could relate the history of several interesting cases where the ball passed directly through the joint, and yet the cases were in a most promising condition sixty days after. Also where the patella was comminuted and large portions removed, with good prospects of recovery.

I forwarded to Washington the ball that wounded the following:—

CASE I. Private John Randleboy, Co. D, 36th Ohio. It entered a little below the centre of right patella, while he was kneeling, passed upward and inward, through the internal condyle, tearing open the joint, and was cut out by surgeon Finley, 2d Kentucky Cavalry.

Excessive inflammation was subdued by cold applications, free healthy suppuration of the joint was established, and which had free exit. The case progressed most favourably, and, Nov. 10th, there was every prospect of final recovery; it resembled that of Lient. Haynie very much, and I think we may class this as a recovery.

CASE II. Private Conrad Sheeler, Co. C, 18th U. S. Infantry, received gunshot wound of right knee-joint Sept. 19th, the ball entered the middle of the patella, passing through outwards and upwards, above the right external condyle, without injuring it, carrying away half the patella, and making a ragged opening into the joint. The remaining portion of the patella came away by the ulcerative process. After being treated in the hospital at Chattanooga, he was transferred to Murfreesboro' Dec. 7th. He progressed to a good cure; wound healed entirely, with an immovable joint, and prospects of a useful limb; he went on furlough March 31st.

CASE III. Corporal William Hill, 96th Illinois Vols., received a gunshot wound of left knee-joint, ball entering one inch above the upper and inner corner of the patella, passing downwards and backwards, and out at the popliteal space; the edge of the patella was perforated, but so little disturbance followed, that it was doubted if it could have passed through, yet it certainly seemed to do so. Spiculae of bone separated, and there was a good deal of swelling about the joint, but no pus in the cavity. He was removed to Murfreesboro' Nov. 15th, and furloughed Dec. 15th.

Other cases of a similar character occurred, but I am unable to give their history to the end.

CASE IV. Private James Belford, Co. C, 89th Ohio, wounded Sept. 20th, brought to hospital in Chattanooga, and remained only three days, and then was sent to field hospital, where he remained six weeks, then to Bridgeport, where he remained four weeks, and finally to this post in January. A ball entered on the outside of the left knee, just above the external condyle, passed across and a little downwards above the edge of the patella and out on the inside of the knee, about an inch from the inner edge of the patella, opening freely into the joint.

He went through the usual course, yet, in spite of his frequent removals, did well, and his condition, May 4th, was as follows: General health good; has grown stout and ruddy. The joint is entirely healed; is stiff and solid in the straight position. There is a slight discharge from a superficial abscess external to the joint, in the popliteal space.

He is still in hospital at Murfreesboro'. His recovery will be entire.

CASE V. Private Geo. J. Shaw, Co. D, 96th Ill. Vols., was struck with the brass percussion screw of a shell, Sept. 19th, on the outer edge of the centre of the patella of the right leg, burying itself an inch in depth. He feels sure that the joint was opened, and that glairy synovia escaped for two or three days. He was taken to the field hospital at Chattanooga and remained until Nov. 25th, then removed to Bridgeport, where he remained until Dec. 7th, when he arrived at this post. The joint and whole thigh and leg were enormously swollen, the screw was extracted soon after the accident, but the joint did not take on ulcerative action.

He still remains in hospital, with a stiff, but slightly movable joint, and he will recover with a useful leg.

CASE VI. Christopher Sawer, Co. I, 88th , was wounded at Missionary Ridge, Nov. 25th. Ball entering at the upper edge of the patella of left knee, passing through external to the outer condyle, and out at the attachment of the external hamstring muscles. He was removed to Murfreesboro', Dec. 7th. The joint took a violent inflammation, and as his health became much depressed, it was thought proper to amputate it at the lower third of the thigh (operation by Surgeon Finley, 2d Ky. Cav.) Dec. 30th.

Four days after the operation hospital gangrene set in on the inner surface of the flap (circular). Bromine was freely applied, and, after the third time, the surface took on healthy action. His stump is now healed (May 4th). It is believed that if free openings had been made into the joint, and inflammation not set up by removal in the ears, we could have saved his leg.

CASE VII. John Bristow, Co. G, 19th Ohio, wounded Sept. 19th.

Ball entered on the inside of right knee-joint, just below and posterior to the inner condyle, passed forward through the soft, spongy head of the tibia, and was found under the skin on the other (outer) side of the joint opposite the head of the tibia. The ball was removed after being brought in. He remained within the rebel lines until Oct. 2d; was brought to Chattanooga, and next day sent to field hospital, thence to Bridgeport, and finally to this post December 1st. He also received a ball through the right forearm. He states that the joint was opened and synovia was discharged. I saw him for the first time on his arrival at this post. The joint was very much swollen, filled with purulent matter, but discharging freely from the openings, which were large and ragged. He went through the tedious process of the disease, but finally got well with the joint ankylosed at an angle of a little more than sixty degrees, so that as he walks the point of the toe is within ten or twelve inches of the ground. He is now (May 4) walking about the streets with crutches, with the joint somewhat tender, but otherwise entirely well. He was at one time reduced to a mere shadow, but he is now stout and hearty.

Other cases of recovery have occurred, but I have been unable to follow the histories.

Tabular Statement of Operations performed, and their Results.

			Side of body.		Period of operation.				Died.	
			Right.	Left.	Primary.	Secondary.	Before admission into hospital.	Total.	After primary operation.	After secondary operation.
LIST OF OPERATIONS.										
AMPUTATIONS.	Fingers . . .	2	5	3	4	..	..	7	..	..
	Forearm . . .	1	..	1	..	1	12	12	..	..
	Arm . . .	6	7	7	6	11	24	14	6	..
	Shoulder . . .	..	..	..	..	3	3	1	..	..
	Toes . . .	..	..	..	..	2	5	1	..	..
	Tarso-metatarsal .	..	..	..	..	2	2	..	..	..
	Leg . . .	4	5	6	..	24	33	33	1	..
	Thigh { lower third .	4	4	..	5	3	11	31	1	..
	{ middle third .	5	4	4	4	4	13	5	6	..
	{ upper third .	..	1	1	..	3	4	3	..	..
EXCISIONS.	Other amputations .	..	1	1	..	..	..	1	..	..
	Elbow . . .	..	1	2	1	..	..	3	..	1
	Shoulder . . .	..	2	1	..	..	1	1	..	1
	Jaw (lower) partial .	..	1	1	..	..	..	1	..	..
	Continuity of long bones	11	7	9	4	3	21	2	2	..
LIGATION OF ARTERIES.	Extraction of balls .	3	3	..	..	..	..	6	..	..
	Of ext. carotid .	..	1	..	..	1	..	1	..	1
	com. carotid .	..	1	..	..	1	..	1	..	1
	femoral .	..	4	3	..	7	..	7	..	5
	popliteal .	..	..	1	..	1	..	1	..	1
	4th intercostal .	..	1	..	..	1	..	1	..	41
Total . . .			45	43	35	35	57	145	20	27

¹ 1 tetanus; 1 pyæmia.

² 1 secondary hemorrhage.

³ Secondary hemorrhage.

⁴ Twenty-four days after ligation of empyema.

The above statement does not include very many operations performed during the first four days in the several hospitals, but principally those found when the record was taken and those performed afterwards.

Thus a very large number of operations about the fingers, hands, and forearm were performed and the patient immediately sent across the bridge to the south side of the river. It was absolutely necessary to get rid of every man who could use his legs. Hundreds of bullets were extracted of which no record was kept. Many cases of amputation of the arm, leg, and thighs were hurried off in ambulances. The fear of the wounded lest they might fall into the hands of the enemy, in case of the army being obliged to retreat, or of the town being shelled, gave wings to the heels of many who otherwise would have scarcely been able to move. All those who are not accounted for in the above table were either removed to the rear or still remained in hospital at the end of October.

Of the operations which were interesting to me excisions were by far the most so; thus, we had eighteen in continuity of the long bones, three of the elbow-joint, one of the shoulder (performed before admission), and what is recorded as a partial excision of the lower jaw.

Of those of the long bones, three were of the shaft of the femur, performed by myself, all of which were fatal; three of the tibia, performed by myself, all of which were perfectly successful; eight of the arm, three performed by myself, one by Surgeon Irish, 77th Penna., one by Surgeon Wolf, 29th Penna., one by Surgeon McMahon, 64th Ohio—of the others I regret I cannot give the operators.¹ Of the total twenty-one cases four turned out fatally, a very small percentage. Of the three excisions of the elbow-joint, two were performed by myself, and one by Surgeon Cleary, U. S. V. Only one was fatal; the other two did well.

Detailed histories would not give any new ideas, and I do not think it of importance, as these operations are now performed by all surgeons, and, when they can be substituted, preferred to amputations. When time and leisure from active service shall permit, I hope to give some further remarks on operations and special gunshot wounds which may be of interest. I have had the good fortune to be placed in positions where nearly four thousand wounded have been directly under my professional care, and afforded a fine opportunity for study and obtaining practical experience.

I have endeavoured to perform as few operations as possible, and trust largely to natural processes of reparation. While I have lost a few cases that would have been saved by early amputation, I have the satisfaction of knowing that I have preserved many a limb which is or will be of good use to its owner.

¹ The other four were of the radius and ulna.

ART. IV.—*On Malingering, especially in regard to Simulation of Diseases of the Nervous System.* By W. W. KEEN, M. D., S. WEIR MITCHELL, M. D., and GEO. R. MOREHOUSE, M. D., Acting Assistant Surgeons U. S. A. In charge of the U. S. A. Wards for Injuries and Diseases of the Nervous System, Turner's Lane Hospital, Phila.

In the old regular army, malingering was better understood by the men, and relatively, perhaps, more often practised than it is in our present army, although we suspect that this is less and less true in each succeeding year of drafts and of warfare. The older soldiers are fast learning deceit, and, if we be not mistaken, the attempts to malinger are now much more frequent, and far more clever, than they were two years ago. As yet, however, such cases as mentioned by Mr. Guthrie, of a soldier's swallowing a cork full of pins to produce haemoptysis, of which he died, the carotid having been wounded; or, as has been often seen in the British service, of artificial ophthalmia, produced by the use of corrosive sublimate to such an extent that the leeches afterwards used were poisoned, and died, or, as the matchless ingenuity of the French conscripts has devised, of imitating polypus of the nose, by introducing the testes of cocks and the kidneys of hares, would be unlikely to occur in our service. Indeed, our soldiers rarely produce diseases or aggravate them; but one case of purposely irritated ulcer has been seen by us, and but very few more have come to our knowledge. The great majority of malingerers consists rather of men who exaggerate real maladies of trifling character, or who feign disease outright. Of the two classes, the first is the larger. The real depletion of our ranks is not so much by feigned epilepsies, paralyses, and the like—we speak now of our own experience—as by these cases of disease, once severe, or always slight, to which men add invented symptoms, or continue to assert the existence of those which have passed away. The stimulus of large bounties has increased the number of these deceivers. Many have concealed symptoms to enter the service, and, when enlisted, have exposed them anew, with every exaggeration of statement, in order that they might be discharged, so as again to re-enter with a second bounty. Others, among substitutes especially, have been content if they could hoodwink the doctors far enough to secure for themselves the ease of hospital wards, and security from picket duty, and the bivouac.

Certain questions of an ethical nature present themselves in many cases of malingering. Thus, for instance, let us suppose the case of a man, as to whom all our means of information have been used. We still feel pretty confident that he is malingering; we cannot in any way become sure. He has no obvious disease. What is the surgeon's duty here? We, ourselves, return such cases to duty, giving the government, rather than the man

himself, the benefit of the doubt. If he be really a well man, no harm is thus done. If he be suffering from diseases which we have failed to detect, he is pretty sure to find his way into a hospital again.

It may be objected that great injury may thus be done the unfortunate victims. But, in the first place, these cases are almost invariably chronic, and, therefore, even if genuine, could scarcely be irreparably injured by a simple journey, and an attempt at duty. And, in the second, as Hennen observes, "it is rarely that diseases of this description exist any length of time without obviously injuring the patient's general health, or his external appearance." Hence, in such dubious cases, the amount of disease actually existing must be ordinarily very minute, or the question could scarcely arise, "Is there any disease?" These remarks are based, however, on the supposition that the surgeon has faithfully used all the means of diagnosis at his command: that his physical exploration has been a careful one; that his inspection and examination have not been limited to the face, coat, pants, and pulse, but have been minute and bodily, especially so of the region implicated; that the history and symptoms have been accurately noted; that chemistry and the microscope have divulged nothing wrong in the urine, &c.; that the special tests by ether, by galvanism, by the ophthalmoscope, the ear speculum, &c., have all been employed in vain; above all, that the doctor's eyes, ears, and brains have been active and observant. In the *Cyclop. of Pract. Med.*, ii. 150, are given two sad cases as cautions. In one the patient complained of pain only, and finally died. His discharge was for many years refused him by Foderé, on the ground of the unreality of his disease; in the other, an English naval surgeon compelled a suspected malingerer, even by flogging, to lift and swing an eighteen pound weight with his arm, despite the most earnest entreaties and asseverations of agonizing pain in the shoulder, from which, soon after, he evacuated two pounds of purulent matter. Had the authors of this cruelty carefully adhered to our rules, it seems impossible that they could have been so grossly mistaken, for it is incredible that life should be lost, or a part so deeply involved, without constitutional or local troubles of such a nature that *some* disease, if not the *exact* disease, must have been recognized as existing. The authors who quote these cases mention the latter, at least, as an instance "in which ignorance was as conspicuous as barbarity."

But what is to be done with cases of undoubted and obstinate malingerers; with men whose endurance and tenacity of purpose would be heroic, were the object in view a righteous one? Experienced army surgeons tell us that it is better, on the whole, to discharge such men, and under the old army rule this would, no doubt, be the best plan, for such men are, as a rule, useless as soldiers, and a dishonourable discharge brands the criminal with shame and saves the government from expense. But, under present circumstances, the man would merely change his residence, and re-enlist

with a new bounty, to repeat again the same easy means of creating an income. If, on the other hand, we return such men to duty ruthlessly, they only escape from one surgeon to find another more easy and more credulous, while in most cases they get a ready discharge at the convalescent camps, and return home to repeat the same thieving and lying process.

To court-martial these men is difficult, since in many a case in which it is morally certain that the man is a malingerer, it is yet impossible to swear to it, and even when it can be sworn to, it is often difficult to advance such evidence as will convince a court of non-professional men. When it is possible to do so, charges should by all means be preferred, and proper punishment secured; but, unfortunately, this measure is usually avoided, even in the most palpable cases, whether from listlessness or ignorance, it is impossible to say. But in cases which from any cause cannot be brought to trial, two courses lie open to us. First, to return the malingerer to duty, with a note upon his descriptive list stating the fact of his malingering. This is fully justified both by the ordinary practice of commanding officers, and by private but official authorization to ourselves. Such a note would always follow up a malingerer, and almost inevitably prevent the attainment of his darling object, by branding him to every officer under whose control he comes. It has succeeded admirably in the cases in which of late we have adopted it. Second, to retain him in the hospital or regiment, and compel him constantly to do the hardest and filthiest duty on police. If it could be authorized in a hospital or military district, to form a "malingerer's brigade," with a peculiar dress, doing just such work as we have mentioned, until they were willing to return to duty as honest men, the disgrace and hard work incident to such a position, it is believed, would be of the greatest advantage, and would rid the service of much of the malingering now existing. Men malinger in order to avoid work and obtain a discharge, and so long as one man succeeds in doing either, so long will ten others continue to imitate him. But if, thereby, they should only subject themselves to harder work than ever, add dishonour to hard labour, and lose all hope of a discharge, malingerers would be rarely seen. But surgeons should be careful about entering such remark on a descriptive list, or in entailing disgrace upon men by accusing them of feigning, and punishing them for it. Every means should be adopted to ascertain *positively* the reality of the deception. It is unfortunately the fact, that one rogue throws a shadow of suspicion on a dozen honest men. Our dexterity in detecting deception must not become so acute that in every "back case" we shall see a malingerer. We remember one man under our own care, with whom we adopted the severest measures, even to the actual cautery, in the belief of his malingering, and who, in undergoing a subsequent physical examination for a promotion, where he would appear to the best advantage, failed to pass on account of the very defect which we had believed simulated. Such cases have made us wary, and we name them as

warnings to others, lest in endeavouring to do justice to the government, we be led unwittingly, to do injustice to the men.

Malingering is more especially rife in general hospitals, and it is easy to see why. Men are there separated from the medical officers who knew all about them when they entered the service, who have been with them during all their campaigns, and are familiar with their general every-day character. Their company commanders are, to a great extent, inaccessible, and many an apocryphal fall or fever, and many an imaginary shell or shot wound, which inflicts the saddest injuries on the hapless sufferers, or perils their health and their lives, would vanish could they be confronted with their captains.

Here, too, it is proper to notice a class of men who escape duty by stating that their disability existed before they entered the service. They often very coolly allege that the surgeon was not sharp enough to catch them, and so they got the bounty and the government a bad soldier. Usually a losing bargain for the government. Even if, in such cases, the disease really existed, unless the disability be complete, they should unflinchingly be made to do duty either in hospital, the Veteran Reserve Corps, or else in the field. They voluntarily enlisted, and as the government has performed its part of the agreement in giving them bounty, clothing, pay, and rations, let them be made to perform their part, to do duty despite the disease. While writing this, we have had in our wards one man with epilepsy, and another with frontal neuralgia and severe headache. The epileptic attacks only occurred monthly. Both of them asserted that their diseases existed long before enlistment, and that they knew it. Without inquiring into the reality of the disease, we immediately returned them to duty, with a note on the descriptive list, stating the facts *as they gave them*, conceiving it to have been their agreement to do duty, disease and all. Besides the special tests in particular diseases hereafter mentioned, there are general modes of discovering malingerers, which are of the greatest value, and which, although they are not new, we have yet reason to fear are not often carried out in practice.

One of the most important of these is the establishment of a system of espionage for men who are lame, paralyzed, choreic, &c., by which they may be observed inside and especially outside of the hospital inclosure when they least suspect it, to see how they act when off their guard, to hear what they say when they are drunk, and to report to the surgeon, who cannot himself study them under these circumstances. This requires the best and most reliable men one can command, and it must be entered upon "con amore." Not to awaken suspicion, the detective should be on some nominal duty, be allowed a pass at all hours, know when the men have passes, and zealously follow them everywhere unseen. Nor is this a degrading duty, as some would imagine. It is due to justice that the scoundrels should be detected, and it is no less due to an honest man who

has unluckily fallen under suspicion, that he should be himself vindicated by the negative proof and by persistent and careful scrutiny.

Besides this, it is important to study the character of a suspected malingerer, as the general deportment of the man in reference to other subjects than his disease may give an approximate estimate of the truth or falsity of his statements. "Falsus in uno, falsus in omnibus," is no less good in the medical jury box than in the legal, and the tacit cross-questioning of observation may educe circumstantial evidence sometimes quite sufficient to warrant a verdict of "guilty," and a sentence of "field duty."

It must not be forgotten that some men carry on the double game of a pretended disease, and an assumed character. Such men are doubly secured if they be adepts, but doubly exposed if novices. Every means that the science or the ingenuity of the surgeon can command is needed, and should be employed, and even then it is sometimes only by a happy chance that they are discovered.

The severer remedies, both medicinal and mental, in most cases, so far as we know, have been too much laid aside. Oftentimes they will avail nothing; tact, rather than force, will win the day, and many a man will suffer dry galvanism, the actual cautery, setons and blisters, and yet persist in his deception, whom a simple artifice will trip. But there are other men of different mould who cannot endure bodily pains, and who will yield to heroic remedies when all others have failed.

Anæsthetics, again, are of the utmost value, and often may be summoned as a reserve to decide the fortunes of a doubtful day. Ether has been often used by surgeons to detect malingering, but we are not aware that it has been very widely used, except in cases of aphonia and pretended dumbness, stricture, enlarged belly, and ankylosis of joints, and contractions of muscles. In all these maladies we have either used it ourselves, or have known of its use by others. But its usefulness should not stop here. It is equally valuable in cases of deafness, blindness, rheumatism, paralysis, and epilepsy, as we shall show in considering each of these diseases separately.

But above all, says Bartholow, the surgeon will find it necessary to use his own senses, his habits of observation, and that peculiar tact in detecting impostors, which, whilst it seems an instinct with some, may be acquired by all who are willing to cultivate it. This tact is shown in a thousand ways. It seems often almost intuitive, and fixes instantly upon a malingerer for no other than "a woman's reason." It devises unusual means for unusual cases, and adapts old means anew. No better school exists for its development than a general military hospital. Many men may, by this tact, be made to pledge themselves to contradictory symptoms. We have seen a man led to state when his right face was paralyzed, that the mouth was drawn very strongly *towards* the right side. Some, by having their attention diverted by synchronous movement of other parts, will forget their old complaints, and betray themselves, as we have seen done by a man whose

left deltoid was "paralyzed," and who held the arm out at full length for one decisive moment, when our supporting hand was suddenly but furtively removed, at the time he was rising to his feet.

Anchylosis.—We have seen but one case in which this was feigned; ether in five minutes discovered the cheat. Genuine ankylosis can be only either, 1, bony or true ankylosis; 2, false ankylosis by deformity of bones, either congenital or acquired by fracture, &c.; 3, false ankylosis, by bands of lymph; 4, false ankylosis by contractions of muscles. The first never could be feigned, from its perfect immobility. In the second and third, the sudden arrest of motion on arriving at its limits, is very marked, and the giving away of the bands of lymph as the motion progressed further, would be in the third, diagnostic. It is only the fourth that could be well feigned, and especially by a soldier who had really received a wound of the neighbouring muscles or nerves. In these cases, as Dr. Bartholow observes, in some excellent remarks on the subject (*Manual of Instruction for Enlisted and Discharged Soldiers*, pp. 143-4), the endurance of the malingerer is most extraordinary * * * in maintaining a most uncomfortable position of a limb for many months. He might, indeed, have said "years," for many such cases are reported. In one instance (*Cyclop. of Pract. Med.*, ii. p. 138), a conscript kept his right knee bent so as never to touch his foot to the ground for seven years. He escaped detection all this time, and was only employed on light duty; but when discharged observed, "I will try to put down my leg, it may be of use to me now," and walked off with a firm step, leaving his cane as a legacy to his doctor. Need we, in view of such cases, be surprised at the malingering for only months in our army.

In the cases of true contraction, the arrest of motion at the instant of putting the muscles on the stretch, and the absence of voluntary resistance, are marked symptoms which a malingerer cannot feign, and in case there be any doubt, etherization will instantly solve the question. We need not resort to all the varied and clumsy means of diagnosis heretofore employed, as mentioned at length by Beck (*Med. Jurisp.*, i. 77). Etherize the man, and in five minutes detection is a certainty, if he be a malingerer. As an example of a typical case of feigned ankylosis, well treated and well related, we refer the reader to the case reported by Dewitt C. Peters, Assistant Surgeon U. S. A., in the *American Med. Times* for March 5, 1864. Another which well illustrates both the perseverance of the malingerer and the complete deception of the surgeon (no less a person than Sir Geo. Ballingall himself), and the excellence and the value of anesthetics is related in *Ballingall's Military Surgery*, p. 614. Excision of the elbow was about to be performed for ankylosed elbow, which was discovered to be perfectly flexible when the man was chloroformed. It is also to be borne in mind, that a man may cause false ankylosis by long continued voluntary disuse of a part. Such a man is no less a malingerer, but he declares his own sentence, and nature carries it out fearfully and justly.

Blindness.—This has been often, we doubt not, feigned, especially in those cases in which slight but real, and sometimes visible defects existed, which would often deceive surgeons inexperienced in diseases of the eye, and occasionally

masters in the art who had not the requisite instruments for more minute inspection.

It has not occurred to us to have any such cases under our care since an eye and ear ward has been established at the Satterlee Hospital, West Philadelphia, under the able care of Acting Assistant Surgeon E. Dyer. We have, however, one means of detection to suggest, which, so far as we are aware, has not been used, but which could readily be employed even in the field, and might prove of the greatest value. Let the sound eye be covered by adhesive plaster, and the man *etherized*, and when recovering from the anaesthesia, when he is unaware, as yet, of his condition, let his sight be tested by the simplest measures, such as offering him some water (some whiskey is better), or your hand, for the affection developed by ether may often be turned to advantage.

We desire also to add one case, kindly furnished us by Dr. Dyer, which is comparatively novel. Its test possesses the great advantage of mathematical certainty. It is a well known fact in optics that a prism, by refraction, presents the object observed at an elevation different from the true one.

One of Dr. Dyer's patients complained of entire blindness in the right eye. An examination by the eye and the ophthalmoscope revealed no lesion, and he was then tested as follows: A prism being held before the right eye, the left eye being open, a pen was held up and the patient asked how many he saw. "Two." What is their relative position? "One is higher than the other." Sadly accurate. His perfect vision was proved, since he saw the pen with the left eye at the real elevation, and with the right eye at an imaginary one. The experiment was repeated with another prism of a different angle, and the result verified, the distance between the two pens only being altered. The prism being removed, the man saw that but one pen had been held up, and very obligingly played cards all the afternoon with his left eye entirely closed by a bandage. The army of the Potomac speedily received a reinforcement of one.

Lameness is a frequently feigned disease, but is very various in its alleged cause. It is often ascribed to rheumatism, to ankylosis, to weak back, to paralysis, to œdema or varicose veins of the leg, to weakness of some point or of the entire limb. Of these we shall only notice here the last three, the others being considered under different heads. The most difficult cases of all are those arising from an asserted weak ankle, or weak knee. Almost every one has himself felt, after a sprain, a certain amount of weakness, which would have incapacitated him from marching, or even lamed him considerably, and which yet could not be detected by the most expert physician. When, therefore, we are puzzled by such a case, as we often are, and can discover no lesion after the most careful examination, we should seek collateral evidence, such as the man's character, his willingness to work, the general tenor of his story of the origin of his malady, his conduct and gait away from the hospital, and when drunk, if it so be that he indulges thus. A detective should instantly be put on his track, and his every movement watched. He should also be etherized and skilfully baited to walk about and display his powers while thus intoxicated. Even then, after the most patient observation, we are often in doubt, and in such cases we usually act as we would in all puzzling cases of supposed pain. We thus do less injustice, we are sure, than by retaining such men for months, for, it must be remembered that while, by returning them to duty, we may wrong, say one man in ten, who is a real case, yet, if we follow the opposite course, we wrong the government in *nine* cases. Besides this, we set a premium on malingering, for

however well a man may keep his secret while it is in progress, when his course is run in the hospital or in the service, he recounts his victories over the doctor as well as those over the enemy. We remember one case occurring in Washington, in which the man in whom the utmost care could discover, during some weeks, no source of lameness, was ordered to duty. He begged first for two crutches, then for one, then for a cane, meanwhile barely supporting himself against the wall, but finding that nothing would be given him, he at last, with the most irresistible jollity, slung his knapsack, and jauntily stepped along the road amid the shouts of the men, that "old Chickahominy," as they called him, had been caught and cured.

We are reminded by a friend (Dr. Da Costa) that he has often detected feigned lameness by observing whether the cane is put down before the lame foot or with it, or after it. A really lame man wants the *support* of a cane, and of course never will use the leg first and the cane *last*. He will always make the cane precede or accompany the foot. Where the lameness arises from varicose veins, their severity must be the test, not always when on the border line, an easy matter to decide. In cases of oedema the cause of this condition must be carefully sought. We only know by report, of its having been caused by ligatures, for we have seen no such cases. One cause, illustrated in the subjoined case, we find has been also noted by Bartholow (*op. cit.*, pp. 145-7), who says that he had at one time ten men in hospital with lameness from oedema, in whom the only probable cause was compression of the popliteal vein by crossing the legs. This we would propose to cure by keeping the popliteal space *sore*, either by blisters, croton oil, &c. Or, perhaps, what would be better, lest the means of cure be alleged as an aggravation of the disease, to blister the well knee and thigh anteriorly. The following case we detail at length as a remarkable illustration of feigned lameness, mental debility, deafness, and spermatorrhœa, kept up with the utmost persistency for months, but finally and fully detected.

CASE.—*Feigned Deafness; Spermatorrhœa; Lameness.*—W. C., private Co. I, 61st N. Y., act. 35, about the time of the first battle of Fredericksburg, Dec. 13, 1862, states that he was sick with pain in the bones, headache, general debility, &c., when, after some treatment, he was furloughed. In May he was sent to Armory Square Hospital, Washington, and has been in hospital ever since. He was admitted to Christian St. Hospital June 30th, 1863. He then complained of almost total deafness, the cause of which was unassignable, severe spermatorrhœa, general loss of "mental power," and lameness and swelling of the right leg, with severe pain in the back, such that he was unable to get out of bed. We minutely examined into the history of the trouble in the leg, at the same time gradually lowering the voice with each succeeding question. He was intently interested in impressing us with the horrible state of his limb, and did not notice the stratagem until we were speaking so low that the surgeons about us had ceased to hear our words distinctly. His "mental power," of which he said so much, was unequal to this trial. We learned, also, that when admitted his hearing was perfectly good.

We next examined the validity of his spermatorrhœa. Having had clean sheets, shirts, and drawers furnished him, with care, on the ordinary day for such a change, and, therefore, without awakening his suspicions, we questioned him the following morning as to the spermatorrhœa, and he alleged several emissions the preceding night. Unfortunately for his veracity, we turned down the clothes, and the sheets, shirt and drawers exhibited no trace of such a misfortune. Subsequently he exhibited to us, with some triumph, indubitable evidences, such as we had sought, but the ready explanation of a manufactured article was too obvious for even his "mental power" to withstand.

We were now thoroughly convinced that all his pretensions were false, but

the difficulty was to overcome his obstinate *inertia*. With unyielding pertinacity he clung to his last hope. His leg was now, by a curious contradiction, his only support. Driven from every other refuge, he posted himself resolutely in this, and disputed every inch. Were crutches and canes taken away, he simply interposed the stumbling-block of absolute rest, and threatened to conquer by "masterly inactivity." Grant him the aids to locomotion, and for weeks he hobbled around on two crutches, with his leg slung in a broad and showy saddle-girth, bemoaning his enfeebled power of ratiocination, and requesting, now and then, in a tone of quiet assumption, some new privilege, such as a reporting pass, or to be allowed to go and come without any pass whatever, on the ground that he had formerly been an officer, &c. Indeed, he assumed a manner far above those whom he called "the men," rarely associated with them, claimed the privileges due him as a former medical student, talked metaphysics, chess, and politics, and had so dainty a stomach that he was constantly requesting at least the small favour of an early pass, to get some breakfast, as he had been unable to eat the plebeian and coarse hospital ration.

We soon found, by close observation of his leg, that there was never a ligature around the thigh, as we had at first suspected, but that he kept up the oedema by constantly sitting with his leg resting on his crutch, which was placed under the popliteal space. Soon after, he completed his race. One bright, moonlight night, the steward heard an unusual noise just after midnight, on his roof, and, on going to the window, he saw our lame man drop from the eaves, outside the hospital, and make a nimble escape without crutches, after having climbed over a fourteen feet pavilion. Undoubtedly he got in the same way, for the next morning he was in the ward, and stoutly persisted that he had not been out. Convinced by the concurrent testimony of two witnesses, and the condition of his clothing, we ordered that if he did not walk out to his meals, he should neither eat nor drink. For three entire days not a mouthful passed his lips, and even then, with a resolution that would have won him fame in any honourable course, he only went in the most helpless manner that could well be imagined. After two days, we sent him to the hospital then designated for malingers, where he so successfully imposed upon a new surgeon in charge, that, against the remonstrances of the ward surgeon, and the antecedents of the man which we had carefully furnished, he was allowed the most unlimited privileges, until a peremptory order from the medical director sent him to "duty." How far he got may be imagined from the fact that our last intercourse with the scoundrel, three months afterwards, was to order him out of our hospital, which he visited as an able-bodied citizen, in a glossy black suit.

Deafness.—We have had a few cases of deafness under our care, of which but one, so far as we know, has been feigned. This case has been stated at length under the head of lameness.

Most of the cases of deafness, unless otherwise more gravely complicated, have been treated by Dr. Dyer. If feigned, they are usually detected by various ready expedients, such as in one of Dr. Dyer's cases, in which, after blindfolding the patient, he held a watch out and asked the man, in a low voice, if he could hear it. "No," was the answer, its categorical form dispelling any doubt that he was answering the *act* rather than the question. Or, as in our own case, when the man's leg was implicated as well as his ear, and while engaging his attention wholly in regard to the former, the voice was so lowered that one of us sitting nearer the interrogator, could scarcely hear, while the patient answered readily every question. The manner and voice of a deaf man are peculiar, and can hardly be simulated well. Bartholow (*op. cit.*, p. 108) characterizes his voice as "low toned," but our own observation leads us with Gavin (*Feigned and Fictitious Diseases*, p. 49) to call it rough and loud, for the very good reason that the man is unaware how loudly he does speak; this is only true, however, in case of marked deafness. He is more happy in his quotation from the *Cyclop.*

of *Prac. Med.*, ii. p. 130, of "the natural but involuntary language of the countenance" as evidence of imposture. Ordronaux also describes aptly (*op. cit.*, p. 71), the interrogative attention of the really deaf as so different from the dull and stupid air assumed by the simulator, and calls attention to the evident fact, that perceiving the fall of a heavy body on the floor may be deceptive as to supposed simulation, since it may make itself known by the shock of its fall. Even very deaf persons, too, can often hear a steam whistle, a drum, or a bell.

In deafness, too, we have to suggest the employment of ether, apparently the best test in malingering in its protean forms.¹ If in the stage of semi-consciousness, when the man forgets his surroundings, and their necessities, he can hear, there can be no doubt as to the case. We should regard the test as conclusive. Of course, suspicion of malingering can only be entertained in case no real disease can be detected on the most careful and thorough examination of the ear by a speculum.

Diarrhoea and Dysentery.—These diseases are not very frequently feigned, so far as we can learn, probably because of their inconvenience. We have seen but two instances. We have mentioned them for the purpose of pointing out the only sure and ready means in case of suspicion. Place the patient under guard, and let each stool be separately observed by the surgeon, if possible, or by the steward, ward master, or other person. This method can never fail us, unless the man has real diarrhoea produced artificially, when the cause must be looked for and removed.

Of Voluntary Vomiting.—We have seen one case at Christian St. Hospital, and Dr. Bartholow has observed two instances. These cases are, we believe, unusual, and, owing to this very fact, are apt to escape, their true nature being scarcely suspected. In all such, the proper treatment is that which was adopted in the three already mentioned. If no loss of flesh nor constitutional disturbance result from the loss of food, nor any disease of the stomach sufficient to cause the phenomena, be noticed, let them be returned to duty, with the proper note on their descriptive list.

Spermatorrhœa.—Although scarcely any notice is taken of this disease in the books, we believe it to be far more frequently feigned than many others of greater prominence. It has been our fortune to meet with four cases of alleged spermatorrhœa, three of which were feigned. They gave reasonable accounts of themselves, deriving their information either from previous experience, or from some of the wretched publications of the day. We readily detected them by having their bed linen and shirts changed at the usual time, and inspecting them for a couple of weeks without the patient's knowledge. Notwithstanding their asseverations of repeated attacks, not a spot could be found. Sometimes, on the assertion of the first discharge, an immediate inspection of the bed-clothes and shirt has proved the falsehood of the man, much to his chagrin. Subsequent evidence in this direction is valueless, for very obvious reasons.

Pain is not a feigned disease, but is the most easily feigned symptom, the most difficult and often most apparently cruel to gainsay or deny, and, at the

¹ Recently, in our wards, ready detection was thus obtained in a case of well simulated deafness.

same time, the most available stronghold to which the malingerer can resort. "If a man positively affirms that he suffers great pain in some portion of the body, it seems to the popular mind absurd for a surgeon to affirm that he does not, and this idea has been acted upon till forbearance is exhausted." (*Woodward's Camp Diseases*, p. 326). That Dr. Woodward's criticism is essentially just, is the only reason we can offer for introducing the subject here, and not because we have anything new to suggest. The only general rule to be observed is, that *where no other evidence than the man's assertion of pain exist, he should be sent to his regiment*. But it must be understood that "no other evidence" is to be accurately determined, and that the rule has exceptions.

We have in our wards three cases of wounds of nerves, in which the only effect left is the neuralgic pain, but we keep them, and treat them, because we regard the seat of wound, the original lesion of motion and sensation, the frequency of just such neuralgic pain, and the men's good general character to be sufficient "other evidence." Yet in two cases of what we knew to be the most agonizing pain, with greater evidence than these, we have known a good surgeon to pronounce the men "humbugs," or, at the least, "exaggerators." No symptom calls for such thorough, patient, and discriminative examination, and such thoughtful, conscientious decision. While Foderé's case serves as a warning from blind severity on the one side, let the many flagrant deceptions successfully practised on surgeons keep us from too weak indulgence on the other.

Often the unexpected employment of a little artifice will suffice. We had one man who complained of constant pain in the hand, from a wound in the median nerve. The wound of the nerve was, at best, very doubtful, and his exaggerated shrinking, even when pointed at by the finger, led us to suspect him strongly. Pressure was excessively painful, and he would scarcely allow his hand to be even looked at. Yet one day, on the plea of seeing how well he could use his hand, while examining minutely the movements of each phalanx of each finger, without his knowledge, we pressed heavily on every part of the hand, and he did not even wince.

No men are so apt to exaggerate and overact their part, nor any so apt to endeavour to insure belief by backing their assertions by repetition and affirmation, as those who feign simple pain. Such means are necessary to bolster doubtful assertions only.

Insanity.—Long treatises of the greatest value have been written upon the subject. But in our army they are rendered absolutely worthless, save in reference to drafted men, and in the Government Insane Asylum, since it is forbidden to discharge insane men. And any one who would feign insanity and submit to its restraints and associations to avoid work and obtain ease, must be in reality a monomaniac. The number of cases of insanity in our army is astonishing. The assistant surgeon at the insane asylum informed us that the average admissions there from the army alone were rather over one every day.

"*Back Cases*," as we familiarly termed them, are those in which the patients complain of "lame back," "weak back," "pain in the back," "kidney complaint," "rheumatism," &c. They occur by dozens in every great hospital. They are in most cases, we believe, real, but from this very fact are also fre-

quently feigned; the more successfully from the obscurity of the symptoms and pathology of the disease, for we believe, with Dr. Cheyne, that the most exact and scientific knowledge is at once the most ready means of detection. It is not strange that in a large army, exposed constantly to the vicissitudes of a soldier's life, marching in rain and sunshine, sleeping without protection, building entrenchments with the spade and the axe, and exposed to all the accidents of the battle-field, an immense number of men should suffer from spinal meningitis, chronic or acute rheumatism, sprains from falls, blows, or carrying heavy loads, congestion and inflammation of the kidney, &c. Many of these cases improve under the appropriate treatment, as indicated by their history and symptoms, and some get worse and worse. But then, a reserve of many more remain as they were, and it is here that the malingerers are found, for they will never get any worse, be it noted, than is necessary for them to succeed. We can give no better description of them than that of Assistant Surgeon Woodward (*Camp Diseases of the Army*, pp. 324-5).

"These patients complain loudly of pain. They stoop in their gait and limp about by aid of sticks, but they appear well nourished, devour their full ration of food, and present none of the grave constitutional symptoms of the cachectic neuralgias we have considered. Nor are any of the symptoms of chronic rheumatism present. There is no deformity, swelling, stiffness, or immobility of the joints. These patients are more apt to attribute their malady to a strain than the genuine cases, and tell frequently a pitiful story. The experienced surgeon will very often detect them by this story alone: they whimper and even sob in an unmanly manner, which in itself alone should produce suspicion."

Here, then, the most careful scrutiny must be exercised. Every means of diagnosis must be employed. The history and symptoms must be obtained in detail, the body strictly examined, the urine analyzed, the constitutional condition studied, and the progress of the case carefully noted.

We well recall the case of a man now in our wards, who was transferred with a note on his medical descriptive list, stating that he was believed to be a malingerer. His urine was loaded with the oxalates, and his febrile and weak condition in a moment assured us that he was a real sufferer. His subsequent history medically, and the most tender, careful, and reliable nurse we ever had, fully confirmed our opinion. Yet we remember equally well another man, who deceived one of us completely, by his connected story and consistent symptoms, until his captain accused him, on the descriptive list, of cowardice, when he immediately deserted, by climbing over a fourteen feet fence, to avoid facing the charge in his company, whether he was to be sent.

These cases have enjoyed the unenviable and single notoriety of having been prohibited from being discharged, by order of the War Department, and with the best of reason. All authors are agreed that where the surgeon can discover no lesion after careful search, he may conclude that "in nineteen cases out of twenty * * no material disease exists" (Marshall), and of course fearlessly return the man to duty.

Often such cases *may be detected* by their mode of using a cane, as noted under lameness, by their disreputable and exaggerated histories, by the reputation they bear with their regiments, as ascertained from the descriptive lists, or from other men of their regiment, by their general character, the alleged want of effect of narcotics, and by espionage, both in and out of the ward. This last, in such cases, we regard as the most valuable means, and unfortunately the most

neglected. In one case, at the Fort Schuyler General Hospital, a man "who had gone for many months in a semi-erect attitude, suddenly straightened himself and threw up his arms to pull down the cape of his great coat, which a gust of wind wrapped about his head." Another, a lame man, who ran to catch a steamboat on the point of leaving, and the subjoined case, all illustrate its use. Our own case also shows the pertinacity and endurance of the man, and that the severe remedies which often relieve rheumatism, are not always calculated to make the malingerer yield.

CASE.—Patrick C., æt. 40, labourer, Irishman, was sent to us as a very bad back case. For four months he had hobbled around, a pitiable object, exciting the sympathy of many visitors, by heart-rending tales about his poor back.

We examined his urine and found, with some surprise, oxalate of lime in abundance. Having, however, several cases of oxaluria in the ward, we suspected him of theft or exchange, and, therefore, forced him to pass it the next day in the presence of the ward-master, when the oxaluria suddenly disappeared and never again returned. One day in December, however, he was discovered at some distance from the hospital walking erect, and with his crutches under his arm. Here was proof positive, so we took him aside, and told him quietly that he was a scoundrel. At this, his indignation knew no bounds. More solemn appeals to Heaven as to his truthfulness were never uttered. We offered to gradually let him get better, and thus save his reputation before the men, and then to send him to duty; but nothing would avail. He still persisted in his innocence. Warning him that a thorough "course of treatment" would be entered upon, such as would do him good if he were really ill, and thoroughly punish him if he were not, we left him. Crutches and canes were interdicted, and he was ordered to go to the table or go without food. The seton was the first means employed, and good care was taken to put two very large ones on each side of the spine, in the suffering "small of the back." Having pretty thoroughly irritated the parts, the tapes were removed (although the bad "humours" of his system seemed rather increased than diminished by them), and dry galvanism to the back was substituted. To apply this the part is thoroughly dried (by flour rubbed on it), and then dry metallic conductors or the metallic brushes are passed over the surface. This limits the electricity to the skin alone, and is the most painful of all the applications, which do not destroy tissue. At the close of a week he begged hard "to be let off that darned lightnin'." At this time we had begun to use the actual cautery, which, as the ward-master remarked, had "rather cleared the moral atmosphere of the ward." After earnest and repeated remonstrances, this means was employed in the present case. After three cauterizations he still held out, and when about to suffer a fourth, he became, one day, slightly intoxicated, threw away all aids to movement, and danced a jig to the amazement of the ward, and to his own future sorrow. He was at once put in the guard house, where he gave up any further attempts at deceit, and was sent to the field. We learned, in a month, that he had been discharged at Alexandria, where, as he said to a comrade, the surgeons were easier to cheat than at Christian St. Hospital.

Puralysis has been a common disease in our wards, and of course has been often feigned. In two cases which we discharged, we were probably deceived, although, as to one of these, some doubt may exist. The other withstood every test we could apply, and was discharged, to become, soon after, a door-keeper at the Sanitary Fair, where we saw him, in a state of sudden health and vigour.

Men who are placed in the same wards with numerous cases of any malady, have an opportunity to study symptoms, and of course to imitate them with the best chance of success. Of this we saw many instances. Besides the general methods of detection, special means are available in cases of feigned paralysis. If the history of the case be a complicated one, and notes have been taken at

the first examination, it is sometimes useful at a later date, to oblige the man to restate his case in full, and to observe discrepancies. Where a wound exists, the patient would sometimes add those symptoms of nerve lesion which he had seen in other men, and in this case the anatomical relations of the wound became of moment. Galvanism was here, as in many forms of supposed palsy, of the utmost value, because, in severe nerve wounds, and in spinal lesions, the loss of electro-muscular properties is apt to follow in the muscles affected. In feigned anaesthesia, the precise limits of the loss of sensation should be noted, while the patient is blindfolded, to observe whether these boundaries are the same, and to see how they differ from day to day, and whether in wounds they correspond to the nerves supposed to be involved.

One of the best tests, too, which has suggested itself to us, and which we have used, has been ether. Several other authors (S. Kane, *Am. Med. Times*, Feb. 27, 1864; Beck, *Jurisp.*, i. 47; Bandens, *Comptes Rendus*, March 8, 1864, &c.), we find have employed it or alluded to its advantages, but we are not aware that it has received the general attention and credit which it should have obtained. If the paralysis is alleged to be complete, and especially if it be from a wound in the neighbourhood of a nerve, or is supposed to be the reflex effect of a distant wound, it is invaluable as a means of diagnosis, and should not be neglected. Tact also may be of the greatest service. We have again and again detected a man who complained of paralysis of some muscles, those of the shoulder for instance, by extending the limb, and then suddenly removing the support when least expected, or when his attention was withdrawn from the limb and directed to some other act. For a moment the muscles would almost instinctively resist the force of gravity, and give unwilling but decisive proof of their power to sustain the weight of the arm. Or again, the limb may be quickly and unexpectedly thrown up, when the motion will be resisted, or its fall prevented. By inducing spontaneous or alternate movements of well and paralyzed parts for pretended purposes, we may also often surprise a malingerer. And finally, by the employment of severe remedies, we may frequently subdue a deceiver.

The following cases illustrate, in detail, most of the above statements:—

CASE.—F. W. W., private Co. A, 121st New York, was admitted to Christian Street Hospital in June, 1863, with a gunshot wound of the left neck, on a level with the angle of the jaw, emerging near the spine. The ball evidently had injured no important nerves. He complained of stiffness and complete paralysis of the muscles of the neck, such that his neck and head were twisted to the left, and his chin pulled down, nor had he the power to use the muscles of the shoulder, especially the deltoid. The entire military history of the man was bad, and while with us grew worse and worse, till he deserted; but was, after two months, arrested and brought back. Meantime we had caught him moving his head about when he thought we were not observing him, and we finally brought him to using his neck as well as ever, by congratulating him on his gradual improvement.

But the left shoulder was incorrigible. For months (when he was in the hospital at all) he kept it to his side, not hanging loose and dangling, as a paralyzed arm does, but tightly to his body. The electric condition of the muscles was not altered, and as this was very remarkable, we detained him for some time till we could determine electrically in other men the state of muscles long voluntarily kept at rest, as on splints, for example. Soon after this we found that the electric condition of such a muscle, when not at all used, is very markedly altered, and we became sure that he used his arm out of our sight, and that neither was it injured directly nor by reflex action.

We then etherized him. He feigned admirably at first, the muscular relaxation of ether, and we thought him anaesthetized without result. But suspecting the double game, we carried the ether still further, and had, in five minutes, the pleasure of leaving him yawning and stretching himself, the arms far above the shoulders, and every effort to move them *down* resisted by his deltoid. The movements were, of course, somewhat weaker than those of the other arm. He was sent to his regiment with a note on his descriptive list giving the facts as stated.

CASE.—Private B., Co. C, 12th Pa. Reserves, complained of palsy of the left side. Soon after his admission, we learned from a ward master, that our unfortunate cripple who hobbled about with a cane, had become drunk at a ball, and was ejected, with difficulty, by five men. There was a little doubt as to these facts, but none remained after the following week. The men occasionally were allowed to dance in the mess-room on Saturday evening, one of them fiddling while an officer was present to prevent disorder. On one of these occasions the music was too much for B., who ended by dancing an astonishing hornpipe. The usual consequences followed. Return to duty—convalescent camp and discharge—for when one of these men reaches the convalescent camp, his escape appears to be certain.

CASE.—Private Dewitt, C. R., Co. C, 68th Penna., evidently a man of considerable intelligence, was admitted into Turner's Lane Hospital in April, 1864. The first glance at the man aroused our suspicion, and we examined his military history. After serving with the three months volunteers, and a subsequent commission as adjutant, in July, 1862, he enlisted as orderly sergeant in his present company. From some trouble with the colonel, as we learned privately from some others of his regiment, who also confirmed our suspicions as to his character, he had been reduced to the ranks, and in the sixteen months after, had never done a day's duty. He asserted it was under the operation of a general order as to absentees.

He stated that after being in hospital for diarrhoea, from Dec., '62, till June, '63, at his own request he was returned to duty. While on the way to the front, at the convalescent camp, he was sitting at noon in front of his quarters, after having superintended a squad of labourers, when suddenly he felt an "oppression in the head, and fell unconscious." When he awoke, towards night, in the camp hospital, he had full use of his left side, but the entire right side was paralyzed. Sensation and motion had been lost in the right face, body, and arm, entirely, and in his right leg partially, and he was unable to talk. At another time he stated that his right leg was not at all affected, and on our expressing surprise, evidently thinking it ought to have been so, he suddenly remembered that it had been almost entirely useless. His bladder, too, he first stated to have been unaffected; but on using the same tactics, we found that he had had incontinence. By a curious physiological contradiction, too, he stated that when his face was first paralyzed, his tongue and face had been drawn to the right.

Feeling and motion had gradually returned in all the parts affected, save that on admission his right arm was still weak, his right face was said to have lost sensation wholly, and motion partially. He limited the loss of motion mostly to the frontalis, levator palpebrae superioris, and tongue.

We began our examination by a course of facial gymnastics. He could shut both eyes well; could open the left widely, and thus elevate the eyebrow; but by no effort could he thus move the right eyelid and eyebrow. We ordered him to open one eye and close the other, and vice versa, when to our amusement, his mind being distracted by the double movement, his right eyelid and brow moved once or twice with the most perfect ease. Next his tongue was examined. He inclined it also to the right, the reverse precisely of what it should be, for, in cerebral palsy implicating the 7th nerve of the same side, the body of the tongue (like the face) is usually drawn towards the sound side. Thinking, however, that, as in the case of his frontalis, we could trap him, we told him to protrude the tongue, on the plea of examining his palate. He first protruded it perfectly *straight*, and then, remembering that it ought to be para-

lyzed and crooked, he suddenly threw it to the right. Every other movement he possessed perfectly, and his pronunciation of the linguals, gutterals and labials was perfect.

The next point was the sensibility of the skin. He first had his eyes closed, and on touching him with a pencil, he stated that he felt nothing. We then suddenly thrust a needle into his face, when he also declared the absence of feeling, and he certainly did not wince. We now tried dry galvanism with Duchenne's powerful battery, powdering his face with flour, and applying the electric brush. The moment the current was established, he slid uneasily forwards in the chair till he could furtively seize the seat and brace himself, by his hands and feet, to bear the pain. By these means, and by secretly grinding his teeth, a movement betrayed by the tell-tale masseters and temporals, he bore the severe pain, which bedewed his face with perspiration, and declared, with amusing nonchalance, that "he could just feel it a little."

His body, he stated, was perfectly free from disease, but we thought we would work a little on his imagination, and proceeded to examine for spinal tenderness, remarking, casually, that we thought it an instance in which we should probably find "that tender spot about the middle of the spine, which we had so frequently found in such cases." He was completely deceived by the allusion, and on our reaching the middle of the spine, he suddenly quaked and shrank from the pressure, saying it was very tender there. Pressure being continued, and allusion made to a patient who had fainted on being pressed at that spot, immediate syncope was threatened, and was only prevented by his breaking away from us with a look of agony. He speedily returned to duty, with a note on his descriptive list.

Thoracic diseases have fallen under our care but rarely in our present wards, which receive none but instances of neural disease or injury. We have met, however, with some cases of feigned consumption and heart diseases. We are indebted to our colleague, Dr. Da Costa, for most of the following particulars. In his position as surgeon in charge of the wards for thoracic maladies he has had ample opportunities for studying both real and feigned cases.

He has found that consumption, and shortness of breath are among the most frequently simulated diseases of the chest. Dyspnoea in these latter cases is never worse at night. It is not altered by exercise, and those who feign it make an unusual display of noise in breathing.

Consumption in its early stages is more readily feigned. By constant coughing, a well man can produce great irritation and congestion of the throat, and the expectoration of quantities of mucus, which he may tinge with blood from his gums, or pricking his finger, &c., and it seems cruel to send a man to duty who is "spitting blood." The only way to detect them is to watch them with the utmost exactness, and especially to make the most careful and conscientious physical examination. We are convinced that most of those who escape field service from this cause do so because of the want of confidence of surgeons in the accuracy of their diagnosis. They are not sure but that there *may* be some disease which they have failed to observe, and so they take the safest course and let the men go. No remedy can be found for this difficulty but careful and diligent study and practice on the part of the surgeons.

The uncomfortable and curious production of heart disorders by tying ligatures tightly around the arms and throat, noticed by some older writers (*Dictionnaire des Sciences Médecinales*, vol. 51, p. 326), has, we are sure, no place in our army, and we think no surgeon could be deceived by such means. Nor do we suppose that medicinal agents, such as white hellebore, digitalis, &c., have been employed. The means that are used are much more ready to hand, and are safer. Such ma-

lingerers, when examined, nearly always hold their breath, apparently with the idea that it has *some* effect on the heart. To such an extent do they practise it that to avoid its obvious functional influence Dr. Da Costa always observes carefully that this function is normally continued. The use of tobacco, especially apt to be excessive in their lazy hospital life, unquestionably tends to produce functional disorders. But they also constantly assert very severe *pain* directly over the heart, which is not a frequent nor urgent symptom of true cardiac troubles. One person in Dr. Da Costa's wards, an obtrusive, persistent man, was in the habit, greatly to his annoyance, of seizing the Dr.'s hand and convulsively pressing it over a heart beating at sixty-eight or seventy, begging him to see how it beat! and what a pain he had!

Some people have undoubtedly the power to control the pulsation of the heart, either accelerating or slowing it at will. A remarkable case is quoted by Hennan (*Military Surgeon*, p. 371), in which the patient could simulate even death itself. But such cases must be rare. In Dr. Da Costa's extensive experience he is unaware of a single instance of this voluntary control over the cardiac actions.

It is, however, a point to be remembered. One of us, Dr. Mitchell, has shown, see *Amer. Journ. of Med. Sci.*, April, 1864, that in some persons deep inspiration, when long continued, will retard the heart pulse as much as thirty beats per minute, while deep expiration is competent to produce great acceleration of the pulse.

Aphonia.—This seems to be a disease feigned by soldiers of late years only, for scarcely any of the older writers on malingering even mention aphonia, although they treat of complete dumbness. We have now had under our care nearly twenty cases of loss of voice, more or less complete, only one of them amounting to true dumbness. This last case was seen by one of us at Frederick City, Md., after the battle of Antietam. His story was that a shell exploded very near him, and that he was so stunned as to fall senseless. He was sure that he was not hit, nor could any evidence of a blow be found a week afterwards, when first seen by Dr. Keen. In falling he had hurt the back of his neck slightly, but no bruise existed even there. When he regained consciousness, in about twenty minutes, as he judged by the movements of the regiment, he found that he had completely lost his voice. No other effect was observed. When examined, in Frederick, he gave a very intelligent and consistent account of himself by writing his answers, and his character as an industrious and willing nurse, at a time when such duty was no sinecure, was of the very best. His hearing and eyesight were perfect; all his limbs were sound; his appetite and digestion good. No laryngoscope was at hand, so that no complete laryngeal examination could be made. His breathing was regular and even, but he seemed unable to make the slightest sound. Every possible test, even to etherization, was thoroughly employed, but no sign of vocal power, not even a cough, was detected. After six months' surveillance as a nurse, he was discharged. We have no doubt of the reality of this case. Was it a case of reflex paralysis through the intermediation of the auditory nerves? We have seen cases of strabismus produced by the same cause.

But two of these cases examined by us of late have been impostors. In every instance of hoarseness, whispering voice, or loss of voice, we have used

ether as a primary test, and always in the ward, before the other patients. It has been greatly to their amusement, as well as our own, to hear a whisperer begin to lisp out his feeble and sometimes pretended silliness, but soon with charming forgetfulness roaring aloud. The jibes and jeers of the men in the ward are all that are afterwards needed to make such men ordinarily the most willing candidates for the front.

But here, as in all cases, the greatest care must be exercised in giving the ether. No examination should stop short of complete and thorough anaesthesia, unless voice reappears at an earlier stage. It must be remembered that in the army, where so many men are familiar with the use of ether, they sometimes simulate the effects of etherization, as well as the aphonia. Two very entertaining cases of feigned aphonia occurred at the 16th and Filbert St. Hospital, Philadelphia, for which we are indebted to Dr. J. Da Costa, one of which is in point. The man completely simulated the muscular relaxation and stertorous respiration caused by ether, and the surgeons were about to give up the case as genuine. The administrator of the ether, however, poured some more on the sponge, when, after a few inspirations, the patient passed into the real stage of excitement, shouting at the top of his voice, and that no slender one.

The second man, on regaining his senses, found himself talking without the slightest difficulty, but quickly recovering himself fell at the surgeon's feet, with clasped hands, exclaiming, with a voice and attitude worthy of a Garrick, "Thank God, doctor! you have restored my voice."

Sometimes, it is true, no voice will be elicited from a healthy man by etherization, but these cases are not frequent, and still less frequent would be the chance of its occurring in a case of feigned aphonia. If it did, the ether would of course fail to exhibit the deceit, and he could only be exposed by catching him in some other way. Practically, however, every case of aphonia should be etherized, even when inflammation really exists, and if no voice be elicited, should be considered genuine, and treated as such. We can hardly expect to meet with such a simpleton as Parr speaks of in his *Medical Dictionary*. "How long have you been dumb, my good friend?" asked a passenger with the most insidious humanity. "Three weeks, sir!" replied the incautious deceiver.

Epilepsy.—We have had a very large experience in the treatment of this malady, having had between eighty and ninety cases under our care. That real epilepsy should be so frequent in the army need not excite astonishment when we consider the numberless cases of wounds of the head, sunstroke, falls, &c., and the immense exposure incident to such a life. When compared to the number of the insane, it is not remarkable.

It is certainly, we think, not frequently feigned in our own army. The "petit mal" we have not seen feigned in a single instance, and, although it is not impossible that some cases may have eluded our observation, yet we are only aware of three cases in which any form of the disease was simulated.

That it should be feigned at all is not a matter of surprise. It is a frequent disease in the army. It is characterized by so great a variety of symptoms that it often seems to know no law, and above all its healthy intervals, so grateful to both real and assumed sufferers, its possible attacks when away from the hospital, or at hours when the surgeon is not present, and, as observed by Ballingall, its

intermitting character, which obviates the necessity of continuous simulation, are so tempting that its infrequency in our army should rather astonish us.

It is a most difficult disease to detect. Some authors regard it as easy to decide between the real and the assumed disease, and speak of it with a flippancy which shows conclusively that they have seen but little of the disease. In every case before us we have asked ourselves, "Is it real?" and have never neglected, at any hour, day or night, to observe carefully the paroxysm itself, and yet in many cases it has been only after the most patient observation and thought for months that we have been able to decide. The very reason why it is simulated is the difficulty of its detection, as already observed. It is difficult to disprove the loss of consciousness and of sensation; and the undoubted existence of reflex actions, as we shall show, adds greatly to this difficulty: the convulsive movements are of such a character, frequently in the real and almost always in the assumed fit, that the pupils cannot be observed, and the endurance and persistency of many malingeringers is such as almost to set at defiance all severe means. It is chiefly "by artifice that feigned epilepsy can be fully detected," (Copeland, *Diet. Pract. Med.*, i. 1031), but even this, in a large hospital, is often only valuable in the first instance in which it is employed, since it then may become notorious throughout the ward. Forewarned is forearmed, and artifices such as have sometimes been used, such as to propose to pour boiling water on the person, and then to pour really cold water on him, or intended castration, or the insertion of a red hot ramrod into the rectum (as once proposed with success by a naval officer), all lose their value with their age and their notoriety.

Besides this, we have to contend constantly with the want of mathematical certainty in nearly all tests, and this not only applies to this disease, but to all others. The evidence is often circumstantial and cumulative, and each surgeon must judge for himself, when the point is reached in individual cases at which it shall be conclusive.

One remark should here be made as to their discharge. If the epilepsy is not more frequent than once a month, nor such as to incapacitate them from work in the meantime, they should not be discharged, but should be transferred to the Veteran Reserve Corps and employed on hospital duty. That this is quite possible is shown in our own hospital, where in the kitchen, dining-room, wards, and even on guard, we have a number of the most efficient men who are epileptics.

Many of the test symptoms, which we see largely dilated upon in the books, we are quite sure are unreliable. Thus, in true epilepsy, the thumbs are said to be flexed under the fingers, and frothing at the mouth is described as an almost constant symptom. It is said, also, that the eyes are opened and staring, that the tongue is generally bitten, that a cry ushers in the attack, &c. The cases we have seen have been nearly all produced during service, and hence our remarks apply to these alone, and not to civil cases. Now among the army cases any of the above named symptoms may be absent. Few men cry out when the fit begins, the bitten tongue is very rare, nor are the other popular medical tests of genuine epilepsy any more reliable. Injury from the fall has been considered important as testimony, but most epileptics sink relaxed before becoming convulsed or rigid, and so do not hurt themselves, or else, as is common, they have a moment's warning, and crouch at once, so as not to fall.

Gavin, *Cyc. Pract. Med.*, tells us that the true epileptic does not sweat during the fit, a proposition which we positively deny. It has been also said, that, if a cold douche checked the fit, it was sufficient to prove it a feigned attack; but this is made useless by the fact that we have seen more than one case of true epilepsy in which a cold douche would terminate at once any single fit. Nor is the expression of the face more available, because it only comes later in the disease, and in many cases not at all.

Apart from the points just referred to, there are others which are more important as tests, and which have been so looked upon by authors. The most characteristic of these, are loss of consciousness, loss of sensation, absence of reflex movements, such as immobility of pupils, want of response to tickling by muscular acts, etc.

And first, let us premise that too little has been said about the time at which these tests are applicable. In the fit quiet observation is difficult. We have seen in our wards one hundred and fifty-eight convulsions in three days and nights, and with an experience, of which this is mentioned as a sample, we confess that it is often very hard to make correct observations during a fit, and that in some cases it is impossible. The period of repose, stertorous sleep, or coma, which follows so many real cases, and is imitated in false cases, is better adapted for observation, and tests which apply to it are most reliable. In a large number of our own cases the epilepsy consisted in a succession of paroxysms, extending over one or many hours, with intervals between, of utter unconsciousness. We met, also, with cases of single fits, at every possible interval, and with a strange and confusing number of instances of recurrent vertigo, of catalepsy, and of every form of spasm known to medicine. One and all are entered on army descriptive lists as epilepsy.

The first admitted test is loss of consciousness. Consciousness is exhibited by the outward evidence of mental acts, requiring reason, memory, perception, etc. Sensation is made known as active, by evidences of pain when irritants are applied to sensitive surfaces. When actual distinct evidence of consciousness during a fit has been obtained, the man must be a malingerer. But we have met with several cases of convulsive nature, where apparent consciousness existed in the fit, and in the interval between two of its paroxysms. The man replied to questions, and gave other evidences of mental activity; yet these cases came to us labelled "epilepsy." Would the test of apparent consciousness have been of safe application in them?

The books speak of absolute insensibility as a test in epilepsy, and of the use of sternutatories, hartshorn, hot water, the cautery, and other severe means, as applications to suspected cases. They state that the real epileptic will make no response to such agents, and that if he give evidence of sensation he is malingering. Here, again, we beg leave to say that if this refers to the fit itself, it is incorrect for light cases, and practically inapplicable in cases of very severe convulsions. Epileptics in a slight fit, or at the beginning or close of a severe one, do very often move when irritated, responding by simple reflex acts, and not by co-ordinated volitional motions, calculated to evade the irritant, or to protect the part. We have seen a severe paroxysm caused by the use of the hot iron during an interval between two spasms, and almost universally they winced, and flexed the fingers violently, when a needle was thrust under the nail; but no effort was made by them to draw away the hand, or to push aside

the needle or the iron. We must, therefore, be careful as to the proofs of insensibility which we accept. This is the more necessary in a class of cases of which we have seen several instances. In these there existed a locality, large or small, which seemed to be hyperesthetic during the intervals, and even in the separate fits. If this part were pinched when the patient was half conscious, it aroused him. If he were in the fit, it intensified that, and if in a deep after sleep, or awake, it often caused instantly a new fit. The region thus become hyperesthetic was, usually, unconnected with the cause of the fit, and was most often the pectoral muscles, or those at the back of the neck. In these localities the muscles of such cases were at all times tender on pressure, while, during the intervals between paroxysms, occurring at brief distances of time, they were so tender as to give rise to the effects above detailed. More will be said of these singular cases in our papers on epilepsy and hyperesthesia. We have said enough to show how great must be our caution when judging as to what amount of sensation exists in a given case of supposed epilepsy, for, as we have seen, there may occur in real epilepsy certain consequences of irritation well calculated to deceive.

Even in simulated epilepsy, where the cheat is undoubted, it is not very easy to procure decisive evidence of the existence of sensation. In this state of violent and voluntary muscular spasm the power to feel pain is greatly blunted, and the body is in the best condition to resist pain. All of us bear pain better when we set the teeth, grasp a chair, or otherwise cause severe muscular movements; while also there seems to be some instinctive relief in the active motions which every one makes use of when in sudden suffering. It might easily be shown that this is not the only instance in the economy where the use of one function lessens the perfection of another; but enough has been urged to show that in a simulated fit it is not easy to get certain evidence that the man feels. If we apply our irritants in the simulated after-coma, we are met by the fact that in the post-spastic stage of real epileptics every conceivable amount of variety exists as to the power to appreciate painful impressions. Perfect insensibility, if it exists here, is of value as evidence; but all less distinct signs of conditions within this state are of imperfect use and value.

The state of the reflex system as to responsive movements in the fit, or in the after comatose state, has been carefully attended to in a large number of our cases. Contrary to the general belief and statement, we have been compelled to believe that in a majority of epilepsies, when observation is possible in the fit at all, it will be discovered that reflex acts follow the use of irritants. If you choose a moment of pause in a paroxysm, and tickle the foot, there will be jerking of the leg, or flexion of the toes. If a needle be run under the nail, he will wince, or stir a little, while in some instances a blow aimed at the open eye will cause winking. It will also be found that irritants often cause reflex movements in the condition which follows a fit; but again we say that no one can apply these tests in a severe epileptic convulsion. Their proper appreciation demands care and delicacy. They are useless and vain amid the storm of muscular action which makes some of these fits so terrible.

The most important test founded upon the supposed loss of reflex susceptibility is the state of the pupil. Upon no other are all authors so firmly agreed, or so emphatic. We are sorry to add that no other has more deeply disappointed us.

We may formalize the general medical opinion thus: In an epileptic fit the pupils are generally dilated, and are insensible to light, being perfectly moveless. They cannot always be easily observed in a spasm; but when they can be, the test is a perfect one. Other authors qualify this opinion, stating that in the fit the motions of the iris are very slow, or altogether abolished. It is furthermore believed that these conditions of the iris cannot be simulated, and can arise only from disease. Here is the popular medical belief, echoed in the last works on diagnosis and recruiting, etc.

We ourselves are of opinion that when, in a fit, the pupils, largely dilated, remain impassive and motionless before a bright light, the case is almost certainly a real one. But, unfortunately, this state of things is of very rare occurrence, even in severe fits. The pupils unquestionably contract in the presence of a bright light in many such cases. Sometimes the movement is sluggish and slight, in others it is almost normal as to range and speed of movement. Soon after the first of these observations had been made, and we had begun to suspect the fallacy of the pupil test, we saw a case of well-feigned epilepsy (detailed below), in which the patient had an indirect voluntary power to control the pupil by converging the visual axes in the effort to squint. The question then arose as to whether any indirect means existed by which a patient could cause the pupils to dilate. It certainly seemed as though the pupil were unusually large in some cases of feigned epilepsy. Few possess voluntary control over the pupil. Was it enlarged unconsciously in some indirect way? To answer these questions, we ourselves imitated an epileptic fit. For this purpose we lay down, and were fastened with two broad girths which ran across the shoulders and over the waist, while the hands were so strapped to the bed as to give them some play. Exactly such means were used in our wards to control within safe limits the too violent actions of epileptics whom we had not force enough to guard without these aids. The fits were simulated as closely as possible, while the members of the hospital staff, in turn, noted the phenomena.

It is needless to say that the fits thus produced would have been invaluable as clinical studies. We feel sure that they might have deceived the most acute physician. As regards the eyes, the following results were obtained: Holding the breath, so as to congest the face and head, causes no change in the pupil. Violent muscular motion instantly dilates the pupil; and so long as the movement continues, so long will the iris move slightly and sluggishly in the presence of bright lights. In some persons these effects are remarkable, but in general they are obvious enough. It seems, therefore, that the dilated pupil of convulsions may be due, in part at least, not to the cause of the convulsion, but to the spasms themselves. Malingeringers are always profuse in the exhibition of spasms, and how then are they to be detected? Their pupils will be dilated and sluggish like those of many epileptics, from the muscular spasms alone. In some cases of epilepsy, undoubtedly, the pupils are immovable, and we are not aware that a malingerer can imitate this; but in a large number of real cases, and in all the feigned ones, the pupils will be precisely alike. Hence we conclude that in most cases the pupil test of feigned epilepsy is utterly worthless.

If, now, we be asked, How would you, then, detect a malingerer? We would reply that it is often a very difficult thing to do, but that we should look to the following tests: We should observe first the patient's face and mental condition, to see if they had been influenced as yet by the disease. Next we should obtain

his personal character as nearly as possible, and all the particulars of the origin of his malady and of his general health, to see if there were any contradictions developed. We should observe where and how he was attacked by the fit. One of our patients, whom we had suspected, set our suspicions at rest when we learned that he had unquestionably had a fit in his *sleep*. We should then observe one or more of the attacks, and never should we decide without doing so. If we can discover any true signs of real consciousness or sensation, unquestionably the man must be a malingerer. Hence, if he grows worse when visitors are present; if he opens his eyes, evidently to see what is going on; if he does not fall off the bed when not held, but struggles sufficiently hard to do so when he is held; or if he exhibits pain, and not reflex movements, from irritants purposely applied, or from self-inflicted injuries, or if he should suddenly recover when severe measures are proposed in his hearing, we should class him as a malingerer. Perfectly immobile pupils, *especially in the absence of violent spasms*, we should regard as an evidence of real epilepsy, but only where they were thoroughly and carefully observed during the spasm itself, which is often impossible. A genuine epileptic usually will keep his hands open if they are forcibly unlocked, while a malingerer rarely does so. His face is pallid before, and flushed or intensely congested during the spasm, while the pallor again returns after the spasm is over; and he usually is sleepy, or falls asleep after the fit is over.

There remains for consideration the ether test of epilepsy, and this we believe to be original with us, and to have been used alone in our hospital wards. We should feel glad to see it tried by other surgeons, as occasions offer. The ether test has been only of late employed by us, and has been tested in eight cases of true epilepsy, during eighteen fits.

Ether has been used by us in two ways, or with two objects in view. We have given it to supposed epileptics who were having successive spasms, with intervals of rest. Now, when thoroughly given, ether will arrest the fits, but as the man revives he will often chance to have a fit while still so far anaesthetized as to make it incredible that he should have arranged the phenomena by will. Here everything will depend on the experience and skill of the observer. If he be sure that the new fit preceded the return of consciousness, it is a genuine case. It is well to add here, what was, we think, unknown, that in some persons who are liable to epilepsy the administration of ether will bring on a fit. We are aware that this is also the case as regards the use of alcohol, which in certain epileptics is sure to result in an attack.

The second form in which we use ether as a test is also, we believe, a novel one.

When ether is administered to a true epileptic case, its first effect is to increase the violence of the spasm, but eventually the patient passes into a deep ether sleep or coma, without any of the usual cerebral excitement. He does not talk or laugh, but goes directly from the state of convulsion into a profound comatose condition. The hyperaesthetic spinal system seems to respond alone to the stimulant power of the ether, while the cerebral centres do not, or at least the only effects which are outwardly expressed are those of spinal origin. When the same test is applied to a false case, the patient presents all the usual effects of ether, talking, laughing, and acting his dreamed delusions in the ordinary way.

When ether is used during the state of comatoid sleep which follows many

fits, there is also an absence of all manifestations of excitement, and the sleep only becomes more intense.

It appears to us that the ether test, as proposed by us, is the most valuable and certain of all the means hitherto employed to unmask cases of feigned epilepsy.

The following cases will be found to illustrate many of the points discussed in the foregoing pages:—

CASE.—W —, private, simulated epilepsy from dog-bite, and imitated the animal as far as possible. His fit was so poorly done, that even the ward-master suspected him, and in a few days, his conscience smiting him, he confessed the cheat. We never saw an attack.

CASE.—*Feigned Epilepsy.*—Admitted, Nov. 18, 1863, J. W., at 17, native United States; enlisted June, 1863, Co. H, Sixth P. V. Cavalry, a medium sized lad of healthy appearance. He gives the following account of himself: His family history presents two subjects of epilepsy besides himself, a sister, and his mother, who died in a fit during child-birth. He remembers hearing it said that he had fits when a child, but knows nothing of them. The second occasion of paroxysms occurred on the day following his enlistment, without provocation of any kind, except possibly the excitement of entering the service. Since that time his attacks have recurred on Friday of each week with remarkable constancy, a constancy that seems unnatural, considering the vicissitudes of diet and transportation to which he has been subjected in changing from hospital to hospital, and which gives no evidence of a periodical cause either in history or symptoms. His expression of face also is an unusual one for an epileptic; there is none of the half narcotized look so common in this disease: his eyes are sharply set and bright, the features are mobile, expressive changes are rapid, and promptly follow the thought; there is evidently no obstruction between the will and muscle. To be watched.

Ward-master thinks the attacks genuine. Type violent, eyes strabismic, pupils contracted and unaffected by light. After the attack complains of headache, and binds the head tightly with a handkerchief for several hours. His general health is, however, unaffected by the paroxysms, his appetite is good, functions regularly performed, sleeps well, and has his fits only in the ward.

The paroxysms were carefully observed by Dr. Keen, and thus noted: the prodromata usually consist of a great difficulty of breathing, which exists to a greater or less extent nearly all the time, but which is greatly exaggerated at the time of the paroxysm, so that his nostrils distend at each expiration, and he grasps his chest on both sides with his hands as if desiring to tear it open. This tightness, or constriction is said to travel from the diaphragm up, and he can answer perfectly well, and indicate its location intelligently till it reaches his forehead, when he loses consciousness. The time of this progress varies from a few minutes to a couple of hours. Just before the attack the sensation he experiences is accompanied by a pricking sensation, as if knives were being stuck into him, and this is most common at the median line of the chest. Coincident with this sense of constriction the flexors of the left fingers begin to contract spasmodically and universal trembling exists as though he was shivering from nervousness. Vertigo often precedes the fit. At the same time that he loses his consciousness his eyes are strabismic in the horizontal axis; the pupils are strongly contracted, and on being exposed to the light they vary in size very slightly, expanding and contracting, but still remain greatly contracted from the normal condition, in which the pupils are rather larger than usual, and quite sensitive to the action of light. The flexors of the fingers on both sides become tonically contracted so that it is impossible to open his fists. He champs with his teeth, and, unless prevented, often bites his tongue. The head is thrown strongly backwards with abnormal strength, and in a state of clonic spasm. He struggles considerably with his arms and legs, but not more on one side than the other. Gradually he recovers his consciousness, his eyes become straight, all the symptoms ameliorate, and, with a more or less severe headache, the attack passes off.

During the visiting hour a paroxysm occurred, and he was subjected to the ether test. The fit was fully installed, general clonic convulsions had been repeated three or four times, the eyes were strabismic, head retroverted, and he was supposed to be unconscious. There was observed to be wanting during the interval between the paroxysms that alteration of deadly pallor and flush, that curious play of the blood over the unconscious features of the true epileptic which can hardly be simulated, and which points most instructively to the important position the organic nervous system may hold in the pathology of this obscure disease. The application of the ether to the nose was resisted by well directed efforts, but the stimulant soon began to show its effects: the tongue let out the thoughts, and the brain forgot to hold the eyes convergent, and then remembered it again with a sort of betrayed look most curious to see. The effect of ether on the true epileptic, if administered during unconsciousness, is, at first, to increase the strength and frequency of the paroxysms, and eventually, if persisted in, to produce complete relaxation with profound coma. He does not rouse from his unconsciousness and laugh and talk, but passes quietly, as far as cerebral manifestations are concerned, into the anaesthetic sleep. The hyperaesthetic spinal system seems to appreciate the primary stimulating effects of ether, while the cerebral centres do not, or, at least, the effect of the stimulant is only exposed through the spinal system.

Dec. 23. Just at this time he began to seek his discharge, both personally and through the Washington authorities, but being fully convinced now of his malingering, we denied the request, and decided to establish an issue by means of the actual cautery. This was mentioned purposely, in his hearing, to the ward-master in the tone of a stage "aside," and a few days afterwards was carried into effect when he was in a fit. His evident pain and efforts at evasion, had he been a genuine epileptic, might well have led us to do him injustice, but it is to be noted that even in a true epileptic, while the sensation of pain is abolished, the appreciation of irritants, as expressed through the reflex system in reflex motion, still exists. In many genuine cases we have tried the actual cautery, pricking by a pin under the nail, tickling the feet, or pressure on hyperaesthetic parts, and they invariably endeavoured to escape from the irritant. The expression—"escape from the irritant"—is to be noted, for they wince and shrink from it, while at the same time they do not endeavour to brush it away by co-ordinated muscular movements of other parts than those irritated. In other words the action is reflex, and not in any sense voluntary. In the same manner if, in the unconscious stage, even in those cases where the eyelids are wide open, the fist or finger is struck at them, without actually inflicting a blow, they will wink ordinarily. This is another indubitable evidence of the activity of the reflex system, which must always be taken into account in pronouncing a judgment as to the true nature of asserted epilepsy.

Some three or four days after this he had another attack, as if to test our determination to apply the cautery. We answered his demand by an immediate compliance. The fit having passed off, we applied the cautery without etherizing him, much to his disgust, and equally to his relief, for no further fits occurred. Soon after he declared that he had had several at home, when, of course, all passes were interdicted, as, evidently, the influences at home were more deleterious than those in the hospital. Even the men enjoyed a grim satisfaction in his detection, and whenever he threatened to have an attack, as he did several times, they would effect an immediate cure by calling loudly "Martin, is that iron hot?" About ten days later, when the ulcer resulting from the cauterization was nearly healed, he brought matters to a head by demanding whether we thought he was "playing off." He was assured with some warmth that we did, and was immediately confined in the guard house for a week, and then sent to his regiment. To make the case complete, his parents, although he stated that his mother was dead, offered to prove that he had had epilepsy from childhood, and protested loudly against our injustice; but when requested to adduce affidavits from a physician to that effect, they proceeded to the private residence of the surgeon in charge, and offered a bribe of fifty dollars for his discharge. His subsequent history we know nothing of, but we were careful to inform both the

provost marshal and the surgeon of his regiment of his malingering. It is probably too much to hope that he ever did any duty.

CASE.—L—, May 8, 1864. Having watched for the chance for over a week constantly, it at last came. The fit was freely inaugurated with champing of the jaws, and violent struggles, especially in throwing his head back on the bed. In a previous fit in the guard house he was exceedingly careful to throw his head back only on the blanket, and his efforts manifestly declined the moment he had struggled on to the floor.

The ether was administered carefully, giving considerable air with it, so that he should not be too suddenly etherized, as he was breathing deeply and hurriedly from the great previous physical exertion. After a few inspirations the paroxysms, which had recommenced the moment the ether was applied, lost their purposive character, and became violent struggles to tear the sponge away from his face, at the same time spasmoid deglutition and puffing respiration occurred, and in a few moments he began to cry out, and to laugh. The ether was then stopped, and he began to exclaim, "Faster, faster!" Presently some one said, "It is played out." He echoed, "pl-pl-played-play-ay-ay-ayed out-to-out-out-out." At this time the surgeon left him, and as he came to thoroughly, he asked where the d— Dr. Keen came from, for he had supposed him absent from the hospital. He was sent to the guard house immediately, and returned to duty the next morning, with a note on his descriptive list, to the effect that he was a complete and remarkably good malingerer.

CASE.—*Genuine Epilepsy*.—Jas. Cyphers, April 29, 1864, 7.30 P.M. The attack was in full progress, eyes npturned, pupils dilated, hyperesthesia excessive, so that pressure on any part of the trunk, at least anteriorly, instantly produced a severe spasm. He had already had five paroxysms when the ether was applied immediately afterwards, while his respiration was deep and hurried. He had, after a few inspirations, another slight attack, throwing his head backwards and forwards but two or three times. After a few more inspirations he had another, which was rather a slight twitching, and then he passed very quietly and speedily into coma, without any efforts to avoid the ether sponge, or without any manifestation of cerebral excitement. As soon as he was completely relaxed, pressure at any part was borne without the slightest wincing or attempted spasm. In the ordinary length of time he regained consciousness, with nausea, which soon passed off. On recovery, he had a good deal of mental excitement, "felt as if he had been very drunk, etc." The hyperesthesia was absent, and the paroxysms did not recur at this time. Undoubtedly a true case.

CASE.—*True Epilepsy—Use of Ether*.—Gaskill, April, 29, 1864. After suffering greatly with the pain in his side, for, say, three-quarters of an hour, he passed into a paroxysm; after the fifth the ether was applied. He had a slight jerking of the shoulders, the usual immediate prodromata of a fit, but they speedily subsided, and he passed into the state of coma without the slightest sign of mental excitement, nor did he attempt to evade the sponge, nor make any attempt at deglutition. After awaking, as usual, he had the ordinary signs of etherization in the mental wandering and hilarity so common, but it was very short. He had no more paroxysms nor any further pain, which usually follows the attack for half an hour to an hour.

May 2, 1864. Etherized him again. The attack came on without the usual precedent pain. It had ended, and he was conscious when the ether was used. After a few inhalations he had a regular paroxysm with all the ordinary phenomena. The attack was brief and mild, and he passed at once into coma. There was no attempt to evade the sponge, nor was there any cerebral excitement. On arousing, soon after, he had slight mental excitement, but no pain until fifteen minutes had elapsed.

May 5, 1864. He was etherized four times; once after an epileptic fit, and thrice for severe cramps; he was perfectly conscious each time; he passed, as before, into total coma, with precedent cerebral manifestations, and with spas-

modic deglutition. The cerebral excitement was very slight, and the subsequent stage of exhilaration very short.

CASE.—Henry Hardmeyer, April 4, 1864. The attack had existed for ten or fifteen minutes, and several paroxysms had occurred when the ether was applied. He immediately struggled violently, throwing his head from side to side. This seemed to be an attempt to avoid the ether, but it is to be observed that this is a phenomenon ordinarily attending his paroxysms. He made no effort to brush the sponge away, and no efforts at deglutition, but struggled violently in every limb. His respiration was, however, so hurried and deep that he speedily passed into the state of coma. There was at no time the least cerebral excitement, no shouting or calling on others, as he was wont to do, even in the ordinary paroxysms, but he quickly lay quietly relaxed in every muscle, breathing gently and naturally. He awoke soon after, quite conscious and excited, offering to shake hands with every one. In a few moments the spasms returned with unabated violence.

CASE.—Stahl, May 2, 1864. Several paroxysms had occurred, and when he was semi-conscious, as he usually is between the fits, the ether was applied; he was not breathing hurriedly; he passed, however, very quickly into coma without any stage of cerebral excitement whatever, and even without any accession of muscular excitement, either epileptic or as an effect of the ether. No effort was made to resist the ether, nor was there any of that choking and attempted deglutition usually seen in administering ether. He speedily recovered from the ether, and passed quickly into another paroxysm of the same character and intensity as before.

CASE.—Ridley. The attack was in progress, and he had two paroxysms; the reflex system was still active, as sticking him under the nail with a needle caused the jerking away of the hand; he winked if struck at, or if the conjunctiva was touched. The ether was given while he was not breathing very heavily; he did not try to resist or escape it, nor did he make any vain attempt to swallow, but passed without cerebral manifestations into complete coma, preceded, however, by two short and imperfect epileptic attacks. So soon as he awoke he passed almost immediately into two other attacks, evidently before regaining full consciousness. These threatened to continue, and the ether was given him again, when, without struggles or mental excitement, he became comatose a second time. He then awakened in a very short time, and in this he resembled other epileptics in whom the recovery from the coma, and the supervention of delirium is very rapid. The usual subsequent pain in his left chest, and the hysterical choking, did not appear until half an hour later, and were then slight and brief, contrary to what he had usually experienced.

May 6, 1864. Etherized him again while in the fit; he became comatose without mental excitement; spasmodyc deglutition was present, but he did not seek to evade or thrust away the sponge. It is to be observed that the globus hystericus is usually a marked symptom, both during the fit and subsequently. No subsequent pain or globus hystericus appeared, but a short cramp occurred.

CASE.—Marsh. The fit, which was very mild, so far as the muscular spasms are concerned, was in full progress, and had continued for about half an hour, when the ether was administered. He endeavoured to avoid the ether, not only by movement of the head, but also by seizing the ether sponge, and thrusting it from his mouth, with his right hand. He passed, however, directly from the stage of epileptic unconsciousness without spasmodyc deglutition into anaesthetic coma, perfectly relaxed and quiet, without the least cerebral excitement, and remained in this state for nearly three-quarters of an hour, when, without the slightest interval of consciousness, the usual prodromata returned, especially the twitching of the flexors. At first very slight, the spasms increased in force gradually until the attack developed itself in full force. The interval between the two paroxysms was much increased by the ether. After repeated attacks during forty-five minutes he became semi-conscious, and finally fell asleep, and slept until next morning, when he still complained of drowsiness.

In concluding this paper, which has been written among other and excessive professional labours, we desire to state that it is not meant to be a complete treatise on malingering. We have desired principally to tell what we ourselves have witnessed, to present to the army surgeon new tests, and to criticize the statements of others in the light of opportunities such as have been rarely presented.

ART. V.—*Hints Respecting the Extraction of Foreign Bodies from the Ear and Nose.* With an engraving. By S. D. Gross, M. D., Professor of Surgery in the Jefferson Medical College of Philadelphia.

ALL writers upon the diseases of the ear speak of the great difficulty that is generally experienced in removing foreign bodies from the auditory tube. Von Tröltsch, whose work has recently been reproduced in this country, and whose sentiments may be regarded as expressive of the latest views upon the subject in Germany, has uttered this remarkable sentence: "Generally the presence of these bodies in the ear is less injurious than the attempts to remove them." This language, written a little more than a year ago, is full of significance. It clearly shows how incompetent medical men generally are to perform apparently so trifling an operation. Proceeding a little further on, the reader of Von Tröltsch's work meets with another curious sentence. "If," says he, after alluding to the swollen condition of the ear, and the impossibility of dislodging the intruder with the syringe, "a case came under my observation where an impacted body produced such symptoms as to indicate an energetic mode of treatment for its removal, and delay was not practicable, I should hasten to extract it by an operation, by making an opening through the wall of the meatus, so as to admit of its being approached and seized from behind." In speaking of the difficulties of such a procedure, he adds: "I have, however, satisfied myself on the dead body that it is easy to separate the auditory tube from the squamous portion of the temporal bone, and thus with a curved aneurism needle reach the membrane of the tympanum. The operation is doubly easy in children in whom there is hardly any bony canal." The means which Von Tröltsch recommends in ordinary cases for effecting dislodgment of foreign bodies are Davel's curette and injections of water.

"Rude efforts," says Mr. Wilde, "made to extract foreign bodies from the ear are as likely to cause mischief as these bodies themselves." The means which he advises for accomplishing the object are the syringe, curette, spatula, and toothed forceps.

Mr. Toynbee, no mean authority upon any subject relating to the diseases of the ear, in speaking of extraneous substances in this organ, remarks:

"Cases are sometimes met with in which the most lamentable results have followed attempts at removing foreign bodies by instruments. Death itself has not infrequently happened; and where the life of the patient has been spared, the ear has sometimes been destroyed and the *portio dura* nerve paralyzed." The syringe and tepid water are the means upon which Mr. Toynbee chiefly relies for the removal of all rounded solid substances. For the extraction of wool, cotton, paper, rags, and other soft material, he employs, when injections fail, a pair of lever-ring forceps, an instrument of his own invention.

The above passages, representing the views of three of the most distinguished aurists of the present day, are quoted for the purpose of showing the most approved methods of extracting foreign bodies from the ear, and the violence that is often inflicted in rude attempts of this kind. From the fact that the works of these authors, especially those of Wilde and Toynbee, have been widely circulated in this country, it may fairly be assumed that the practice inculcated in them is the one generally pursued by our medical men. Not long ago I read in the report of a discussion before a learned body in a neighbouring city, that the best instrument for extracting a foreign substance from the auditory canal was an ordinary pocket probe bent at the extremity; and, as the remark was made by a distinguished professor, I take it for granted that he is not the only surgeon in this country who thinks so.

For a number of years past, I have entirely limited myself, in the extraction of foreign bodies from the ear, to the little instrument delineated in the accompanying sketch, originally described in my *System of Surgery*,



and now regularly put up in all the ordinary pocket cases manufactured in this city. Composed of steel, and therefore entirely inflexible, it is about five inches and a quarter in length, very light and delicate, cylindrical and somewhat rough at the middle, to afford a good hold for the thumb and fingers, spoon-shaped at one extremity, and furnished with a little tooth or prong at the other. This tooth, which projects at a right angle from the shank of the instrument, is exceedingly small, and therefore admits of easy insinuation between the foreign substance and the auditory canal. The curette or spoon is also very delicate, and bent considerably more than the ordinary cataract curette. Provided with such a contrivance as this, no surgeon, however unskilful or inexperienced, can possibly fail in his object.

The plan which I always adopt, when a case of foreign body in the ear is brought under my notice, is to place the patient in an easy recumbent position, with the head slightly raised upon a pillow, and to administer chloroform to the extent of entire obliviousness. This is absolutely necessary when the patient is a child, or a nervous, excitable adult. The opera-

tion is greatly facilitated if there is a clear light, although this is by no means indispensable. Taking hold of the upper and back part of the concha, and pulling it gently so as to efface the curve at the entrance of the ear, I carefully pass the narrow extremity of the pick sidewise between the intruder and the wall of the meatus, and bringing the little tooth or prong behind it, I readily jerk it out, no matter how deeply it may be buried, by a kind of lever movement with the handle of the instrument. The operation is generally the work of a few seconds, and is altogether free from hemorrhage. No possible injury can be inflicted upon the meatus, much less upon the membrane of the tympanum, if proper caution is used in the management of the pick. In this manner I have extracted quite a number of substances of various kinds, as pieces of slate pencil, grains of corn, beads, pebbles, and cherry-stones, in most cases after vain attempts at relief had been made by other practitioners. When the substance is very small, the object is sometimes most readily attained by the use of the curette, but in general the prong is altogether preferable, whatever may be the form, size, or consistence of the body, whether round or angular, small or large, hard or soft. A pebble, grain of coffee, bug, or pellet of paper, wool, or cotton, may all be equally easily extracted. Ear wax, however hard, or however firmly impacted, is more readily removed with such an instrument than with any other contrivance of which I have any knowledge.

Insects may, in general, be readily dislodged by filling the ear with water or oil, which have the effect of suffocating them. When they are dead, they may be promptly extracted in the same manner as any other extraneous matter.

There are certain rules to be observed in the extraction of foreign bodies, no matter what means may be employed for the purpose. In the first place, the surgeon should be perfectly satisfied that there really is an extraneous substance in the ear; or, in other words, that the patient is not labouring under a false alarm. Such an occurrence is by no means uncommon, especially when the individual is a nervous, excitable female, impressed with an idea that a bug has passed into the ear, or that the head of a pin has fallen into it. A careful inspection with the aid of a good light, either solar or artificial, will be the safest guarantee against any error of this kind.

Secondly. The meatus should never be meddled with when, in consequence of previous efforts at extrusion, it has become severely inflamed and more or less swollen. Here the proper plan is to wait until, by leeches to the inside of the tube, active purgation, light diet, and other measures, the morbid action is sufficiently subdued to admit of the requisite manipulation. The want of this precaution has sometimes led to violent inflammation, seriously imperilling life. The ear, if let alone, is generally remarkably tolerant of the presence of foreign bodies, even when rough or of large size. Not long ago I removed, at the clinic of the Jefferson Medical Col-

lege, a large cherry-stone, which had been lodged deep in the meatus of a little girl for seven years, without any other inconvenience than slight occasional dizziness.

Thirdly. The foreign body is sometimes concealed by blood, pus, or cerumen, thus necessitating the use of the syringe and tepid water, before an attempt is made at extrusion.

Fourthly. The after-treatment should be conducted upon general anti-phlogistic principles. Ordinarily, little, if anything, is required. It is only when the parts have been rudely handled that active measures will be needed, and even then the case will usually yield to a brisk purgative and the application of a few leeches to the meatus, along with a few doses of Dover's powder. Should the brain be threatened, blood must be freely taken from the arm. The syringe with tepid water, simple or medicated, will be required if there is any considerable discharge of matter, especially if it is offensive and irritating.

I do not wish to be understood, from what precedes, to say that I disapprove of the use of the syringe for the removal of foreign bodies from the ear. The operation, if properly performed, is frequently crowned with success; but it is often tedious, always disagreeable, and sometimes wholly inadequate. Wool, cotton, paper, cloth, and similar articles, may often be easily and successfully removed with the forceps. As to the pocket probe, bent at the point, no one who knows anything of the nature of such an operation would ever think of employing it. The idea of separating the auditory canal from the squamous portion of the temporal bone, with a view of obtaining access to the extraneous substance, as suggested by Von Tröltzsch, is so absurd that it ought to be ranked among the exploded notions of the barbarous ages.

The removal of foreign bodies from the *nose* is usually, in the hands of the general practitioner, an operation of great difficulty; quite as much so, indeed, as the withdrawal of an extraneous substance from the ear. The efforts that are made to accomplish the object are commonly of the most misdirected and herculean character; the struggles of the patient, ordinarily a child a few years old, are violent, if not uncontrollable, and the result too often is a bloody, fruitless battle, not less distressing to the parents than discreditable to the surgeon. This is not an exaggerated picture. A practice of upwards of a third of a century has afforded me many unfortunate illustrations of its truthfulness; and yet the operation, if properly performed, is one of the most easy and simple in surgery. As commonly executed, its effect is, not extrusion of the foreign body, but its further and deeper impaction in the nose. The instruments generally employed are the forceps, a grooved director, or a probe bent at the extremity. Need we be surprised that frequent failure should be the result under such circumstances? The extraction of an extraneous substance with such con-

trivances is altogether a blind procedure. The surgeon who succeeds with them deserves great credit for his good luck; for, really, it amounts to nothing else.

My practice in these cases is simply this. In the first place, the child must be properly secured. If he is very strong and rebellious, he should be wrapped up in a sheet or apron, to prevent him from using his hands and feet. Chloroform is seldom necessary. The head, inclined slightly backwards, should be immovably fixed by an assistant, while another assistant holds the patient upon his lap. The small extremity of the "ear pick" is then carried flatwise upwards into the nose in the direction of the bridge, until it is fairly beyond the foreign body, when, the point being depressed, the little hook or tooth is at once brought in contact with the substance, and extrusion effected by a kind of jerking or wriggling movement of the thumb and fingers. The operation is generally over in a few seconds. Trouble can arise only when the substance, in consequence of previous abortive efforts, has been pushed back into the nose, or when, as occasionally happens, the nostril is filled with blood. I have myself never encountered the slightest difficulty with the instrument in question, and believe that failure in any case is impossible, if it is judiciously used.

Practitioners generally do not seem to be aware that foreign substances in the nose are commonly situated very superficially. In most cases, they occupy the entrance of the nostril, resting against the anterior extremity of the inferior turbinate bone, or between this bone and the nasal septum. It is seldom that they are pushed by the child into either of the chambers of the nose, even when they are of small size. If rude and protracted attempts, however, have been made at extraction, the probability is that the body will be found upon the floor of the nostril, or firmly wedged in between the turbinate bone and the nasal septum. In such an event, the operation will be more difficult, but still perfectly feasible. In a case under my charge not long ago, the substance, a small bean, had been pushed far back into the inferior meatus, and I was in doubt, for a few moments, whether it could be reached. Keeping the point of the instrument in close contact with the surface of the turbinate bone, I soon succeeded in passing it beyond the extraneous body, which was then extracted with the greatest facility.

As foreign bodies in the nose are invariably productive of more or less irritation and fetid discharge, they should always be extracted as speedily as possible. In a case reported by Dr. Hays, the able editor of this journal, the substance, a glass button, kept up incessant inflammation and suppuration for upwards of twenty years. Its extraction was followed by a speedy cure. Whenever a young child is brought to a surgeon with a fetid discharge from the nose, especially on one side, a careful search should be made for the presence of an extraneous substance. A few months ago, a stout, fat child, twenty-one months old, came under my observation on

account of a very profuse and offensive profluvium from one of its nostrils. Suspecting the existence of a foreign body, I carefully explored the affected cavity with my instrument, and, much to the surprise of the mother, brought out a large paper pellet.

ART. VI.—*Report of a Trial for Poisoning by Strychnia.* By GEO. F. BARKER, M. D., Prof. of Chemistry, Western University of Pennsylvania, Pittsburg.

DANIEL E. SALISBURY was tried at a Court of Oyer and Terminer held at Cortlandville, Cortland County, N. Y., on the 15th day of June, 1863, for the murder of his wife, Frances E. Salisbury, by poisoning her with strychnia.

Instances of poisoning by this alkaloid are extremely rare, especially in this country, and still rarer are the convictions which have followed; I have been able to learn of only a single one in the United States. This fact alone would give interest to the present case. But there are special features in it of great value to the toxicologist, which will warrant its publication. And as a complete knowledge of all the facts gives a proportionate value to any record of this sort, this must be my apology for detailing these facts at some length.

The history of the case, as developed by the evidence both on the coroner's inquest and on the trial, is as follows:—

The defendant, Daniel, was the son of Elisha and Sally Salisbury, who resided about two miles and a half east of the village of Cortlandville. Mr. Salisbury was a farmer of some means, and an exemplary man in the community. The family consisted of two sons and three daughters. The elder son, Orlando, was married, and lived not far from the father's house. The eldest daughter, Lavinia, was away much of the time teaching school. The other members of the family, consisting of the defendant, and his sisters Rosetta and Esther, respectively fourteen and thirteen years of age, lived with the parents on the farm.

The defendant first met Miss Newton, who afterwards became his wife, at a camp-meeting, a year and nine months previous to their marriage, which took place the day of their second interview, June 2, 1861. His parents were strenuously opposed to his being married; first, because he was too young, being in his nineteenth year; and then, because he had nothing with which to support a wife, as he worked on the farm for his father, for which he received only his living. He therefore kept it from them, and took his wife to her uncle's, in the town of Homer, the night after they were married. The next day, however, they went into the vicinity of the father's house, and spent the night at the house of Mr. Stafford, a neighbour. They went after this to his brother Orlando's, about fifteen rods from the father's. Here they remained about a week, during which time they made a call on

the parents. At the end of this period, Mr. Salisbury consented to allow defendant and his wife to live with them. They had been married but about a fortnight, when defendant's sister-in-law told him that there were reports in circulation concerning the chastity of his wife. These were based, no doubt, on the fact that a young man had been arrested in 1857, at the instance of her father, for abducting her under promise of marriage. Defendant stated that his brother had found some bottles in her trunk which he supposed contained medicine to doctor away the child. One day about this time deceased came to a neighbour's, weeping, and saying that her husband was going to leave her. Presently he drove up in a wagon which contained her things, saying that he knew all he wanted to about her; that if she was as reported, he did not want to live with her; and that he should take her to her uncle's, in Homer, and never go near her again. Mr. Stafford persuaded him to leave her and the things at his house. He then left, promising to return and spend the night there, which, however, he failed to do. In the morning the deceased returned to Mr. Salisbury's. The week after this affair the defendant told his brother that he became satisfied that his wife was virtuous from the fact that she had her monthly periods. They then lived together at his father's until the succeeding fall, not very pleasantly, it seems, for the eldest sister, Lavinia, when at home on a visit, left the house on account of difficulties with the deceased, declaring she would not live in the house with her; and deceased frequently went to the neighbour's above mentioned, crying and complaining of ill-treatment from members of the family, saying that even her husband was cold and unfriendly.

In the month of September following, defendant enlisted in the army. He went over to the adjoining village of McGrawville, and called at the house of a young lady to whom he had paid some attention previous to his marriage, with the intention of persuading her brother to go with him. She said she thought a married man ought not to leave his wife and go to war. He replied that he should not have enlisted if he had got the one he wanted. On his return home, his mother told him he must provide a place for his wife if he joined the army, as she could not have her left on her hands. When he went to report at Elmira, he engaged a place for her with a Mr. Perkins. She accompanied him to the depot, but he treated her so neglectfully as to attract the attention of the bystanders. A day or two after, Mr. Salisbury was going to Homer, and, at her request, he took her to her aunt's, where she remained about a week. She expressed her feelings to her aunt, and asked if there was not some root she could take to procure an abortion, saying she did not care if it did kill her. Defendant was absent at Elmira a week or ten days, when he returned, having been rejected on the examination. He then went to Mr. Perkins's with his wife, and lived there about a month, he working on the farm. At the close of this time they returned again to the father's house, where they remained through the winter. During all this season he was exceedingly arbitrary towards her, requiring from her the most abject obedience.

In February, 1862, deceased was taken sick. Defendant went for Mrs. Bolles, a midwife, saying to her that he thought his wife was going to be confined, and that he wished her to dispose of the child, asking if there was not a spot on the head where pressure would produce death, or if the cord could not be left untied. The midwife, to her credit, refused to do anything of the kind. Upon making an examination, no appearances of approaching confinement were indicated. Still, defendant's sister-in-law, who was present, seemed determined to have a child born; so much so, that Mrs. Bolles for-

bade them to leave her alone with the deceased. In a day or two she came out with the measles, and was treated successfully for them by the midwife. Defendant manifested a singular indifference to his wife's illness, for which he was reproached by a hired man of his father's, who told him that she was sicker than he was aware of, and that she might not live. Defendant replied that he thought Mrs. Bolles was as good as any one to attend her, and that, at all events, he should not mourn for her till she was dead. He did not stay in the room with her, but slept up stairs, leaving her alone; and one night she rose and crawled to the fireplace and made a fire, as she was troubled for breath.

On the seventh of April deceased was confined. She was attended by the midwife just referred to, and was safely delivered of a son. She recovered as usual, without any untoward symptoms. Three weeks afterwards, owing to some difficulty in the family, defendant furnished one of the rooms in his father's dwelling, and with his wife commenced keeping house there, she doing her own work. Not being very strong, and having a large babe to nurse, she complained frequently of headache, sometimes accompanied with dizziness.

In the early part of May corn was planted on the farm. When it had come up, the crows were very troublesome in uprooting it. One day, towards the end of the month, defendant's father said to him that he had heard of several instances where crows had been killed with strychnine, and he did not know but it would be a good plan for them to get some. Defendant said he guessed he would get some and try it. Accordingly, on the fifth or seventh of June, he went to the store of a druggist in the place, and asked if they had any poison. On being answered in the affirmative, he said, "Have you any strychnine?" He was told they had. He asked the price, and said he would take two shillings' worth. The contents of one of the ordinary 55-grain ($\frac{1}{8}$ oz. av.) bottles were poured out upon a paper, and divided into three parts; one of these was put into a vial which the defendant had brought for the purpose. As the clerk laid it down for a moment, to wait on another customer, defendant took it and carried it away before it was labelled. A person who was in the store at the time, and knew the facts as to the purchase, seeing defendant's father the same day, told him about it, and asked him to send it back, that it might be labelled and recorded. When Mr. Salisbury returned home, he asked defendant if he had purchased a bottle of strychnine. He replied in the affirmative, saying that he bought it to kill the crows that were picking up the corn. His father told him to take it right back, as he did not want it round there at all. Defendant said that he would do so. In two or three days he returned to the druggist's, and had it labelled, but did not leave it. Nor does it appear that he used any of it for killing crows, as he intended.

Not many days after this defendant called upon Dr. Bolles, an eclectic physician of the place, and told him that his wife thought she was pregnant, that her stomach troubled her as it did before her child was born, and that she wanted some medicine to produce an abortion. Dr. B. asked him if she nursed her child. He said she did. He asked if there was any appearance of the menses. Defendant replied that there was not. The doctor said he did not think it possible that she was pregnant, but that he would prepare some medicine for her, though he could not do it that night, as he was tired, and he could not prepare it in less than three-quarters of an hour. Defendant said if he would prepare it and leave it, he would call

for it. He called twice within the next ten days, but did not find the doctor in. Mrs. Bolles mentioned this to her husband. He said he would leave something with her in case he called again. He therefore took half a tablespoonful each of golden seal and black cohosh, and a teaspoonful of eubebbs, all in powder, and mixed them with a little pulverized liquorice. This he designed, as he says, "simply to strengthen the stomach, allay irritation, and act as a gentle tonic." The next week the defendant came again. The medicine was given him, with the direction to steep the whole in a quart of water, and take a spoonful occasionally. The medicine was prepared and taken by the deceased.

On Sunday, the twenty-ninth of June, there was a funeral of a soldier at McGrawville. Defendant went over, and attended church in the afternoon with his former inamorata. After service, he accompanied her to her home, and, upon her invitation, he stayed to tea, which was served about four o'clock. After tea, in presence of this young lady, her parents, and her two sisters, defendant, after making some general remarks about the war and the soldier who had that afternoon been buried, changed the conversation very abruptly by saying that he had heard of a woman who had killed four husbands before she was detected, by putting tacks in their ears. He said it was easy for one person to get rid of another by using arsenic, but that strychnine was better, because it would do it up quicker, and could not be detected after death. Strange to say, instances were quoted to him by the family in support of his assertion; and a case was mentioned which had occurred in Cortlandville, where no strychnine was found, though it was suspected to have caused death. Another case was alluded to, where a man had poisoned his wife with arsenic, but was detected and hung. Upon which defendant reiterated his former statement that strychnine was better, because it could not be detected in the stomach. The young lady he was visiting then said to him she thought it was time for married men to be at home. He replied that he had not got such a woman as he expected. Her brother-in-law and his wife coming along in a wagon just then, they asked her to go home with them. She went with them, and defendant jumped into the wagon and rode to their house. He remained there until nearly ten o'clock, when he returned to his father's house in Cortlandville. His wife had not been to church that day, but was well, and took tea with Mr. Salisbury's family.

The next morning, Monday, June 30, defendant and his wife took the breakfast which she had prepared, as usual, between six and seven o'clock. After milking, his father sent him away some three miles for a veterinary surgeon to treat a sick horse he had, instructing him to get some cabbage-plants at the village on his return. He reached the horse-doctor's between eight and nine o'clock, and remained there until about noon, when he started to return. He reached home with the cabbage-plants about two. After breakfast, his wife, the deceased, did up her customary morning's work, and about ten o'clock she went into the wood-house and commenced the weekly washing for herself, husband, and child. She finished the heaviest part of it, all but rinsing the clothes, before dinner. She ate dinner with Mrs. Salisbury, returned and finished the washing, and, after spreading the clothes out to dry, went into her room, as was her custom, and lay down. When the defendant returned at two o'clock he found her asleep. He went back into the buttery and ate a dish of bread and milk and a piece of cake. She soon awoke, and complained of some fatigue, and said she did not feel

very well. Defendant's mother went in and took the baby, and, shortly after, he, having finished his dinner, came in and lay down upon the bed. In a few moments his father called him, and he went out and began to set out the cabbage-plants. He was presently called away by the horse-doctor, with whom he went into the kitchen, to prepare the medicine on the stove. When it was ready, they took it to the barn. This was about half-past five. Meanwhile deceased had been preparing supper for herself and husband, which consisted of toast, without tea, and which was ready at six o'clock. Defendant came in, and went to his own room, to take supper with his wife. His youngest sister, Esther, took care of the baby. At the same time the parents took their supper in the kitchen, the doors communicating with both rooms being open. Defendant finished his supper in about five minutes, and went into the kitchen. He asked his mother what kind of tea they had. She replied, "Boughten tea." He then took up her saucer, drank from it, and ate some wheat pancakes. When he had finished, he went out with the hired man to do the milking. While thus employed, deceased came to the door, and said, in a joking way, "Dan, if you want another supper, I'll get you one; you ate all you could at your own table, and then ate at your mother's, and if you want another supper, I'll get it." He took it in good part. She remained in the kitchen half an hour or more, when she went down into the cellar and brought up some potatoes, which she prepared for breakfast, and put them with some belonging to Mrs. Salisbury. She then went to her own room to retire. This was about half-past eight o'clock. Defendant and the hired man carried the milk into the milk-room. After milking, defendant went to the barn to feed the horses. On his return, he met his brother in the road, who had just come from the village, and who handed him a letter for his father. After some conversation, about nine o'clock defendant went to the house. When he entered the kitchen, his father was reading from the Bible. He sat down in a chair near the door, and when the devotional exercises were concluded, he handed his father the letter, saying, "Are you one of the deacons of the Baptist Church?" His father replied, "I am," and opened the letter. Defendant stayed a moment, to see who the letter was from, and then went to his own room, closing the door after him. His father continued reading the letter. It was not long, covering only a single page of note-paper, and written in a coarse hand; but there were two words which he was unable to make out. He then handed it to his wife, took off his boots and stockings, filled and lit his pipe, and commenced smoking. He had taken but a few puffs when his wife handed the letter back to him, saying she could not read it. He took it, and had read the first line, when a loud scream was heard from defendant's room. Mrs. Salisbury instantly took a candle and started to go there. While crossing the dining-room, she heard deceased say, "Don't, Dan, don't!" or something similar. When she reached the door, she called her husband. He came, and went into the room with her. There was no light there. Deceased lay on the bed, near the front side, towards which her right arm, upon which her child was lying, was extended. She was upon her back, and her body was straight. The defendant, who was undressed, was on his knees on the back side of the bed, endeavouring to hold her on the bed. The mother spoke, and said, "What in the world is the matter, Frank?" Deceased looked at her, opening her eyes and partly raising her head, being perfectly conscious, and said, "Oh, mother, mother!" The child was taken from her and given to

Rosetta, who, with the other members of the family, aroused by the screams, had come into the room. The father, upon his entrance, placed one of his hands under each shoulder, for the purpose of raising her up. Her muscles were rigid, and her body stiffened. She appeared to be in a "spasmodic fit," as he termed it. There was a twitching of the muscles of her shoulders under his hands. Her hands, arms, and legs, as well as her body, were stiff, and her head was thrown back. Her breathing was very hard, as though it was very difficult, her breath being forced through her teeth, making a shrill noise. Mr. Salisbury could not raise her, so he waited until the spasm had passed. In a few moments the muscles relaxed, and she was raised into a sitting position. Some camphor was put on her lips, and they attempted to give her some internally; but she carried her head back, as though it was offensive to her. Water was then given her, and she drank two or three swallows of it. The father said, "Frank, do you feel any better?" She opened her eyes, and made an effort as if to speak, but was unable to articulate anything. Defendant had said nothing on the entrance of his parents, or in reply to their inquiries, nor did he do anything for his wife, but seemed like one half paralyzed with fright. His mother said, "Daniel, she is in a fit; get up and help rub her." He said he would as soon as he could dress himself. He did not, however, wait to dress, but got up and assisted to rub her hands and arms. When her hands were released, she seized her abdomen violently, as if to tear it, such was the intense pain there. His father then told him to get up, dress himself, and go for the doctor, while the hired man went across the way for Orlando and his wife. Mrs. Salisbury rubbed her face and stomach with camphor. She said in presence of the defendant, who had not yet gone, "I'm afraid she has been eating or drinking something that is poison, for I saw roots steeping on her stove two or three weeks before this." Some one then spoke of their neighbours, the Staffords, and defendant said he would go for them. After an interval of about five minutes she went into another spasm. Her lips were slightly parted, the teeth closed tight, the breath forced through with considerable exertion, and she groaned as if her suffering was intense. About this time, Orlando and his wife, who had been sent for, came in. Mrs. Salisbury said, "What in the world is the matter? is she poisoned, or what is the matter?" Orlando replied, "If there is any poison about her, give her some lard." Some was melted and brought, but her teeth were so firmly set, that it could not be given. Then came another intermission, during which Orlando was sent for the doctor. Her head returned to its natural position, and she was easily held up. She was spoken to, called by name, and asked if she felt any better; but she seemed to take no notice of it. It lasted about ten minutes, when she had a third spasm, not quite so long or so hard as the others, though similar. Water was thrown on her face and head, which seemed to convulse her, but slightly. A mustard poultice was prepared and applied to the stomach. During the next intermission hot water was prepared, to put her feet in. She was moved down in the bed, so that her feet hung off and could be immersed. Almost immediately she went into the fourth spasm. The defendant, who had gone for the Staffords, met his brother Orlando, and told him she was dead. When he arrived at the neighbour's house, he said to Mr. Stafford, who opened the door, "Eli, I want you to come up to our house immediately. Frank is dead; she has poisoned herself." Passing in, he repeated the same words to those inside, and then went up stairs to the room of a

hired man, where he made the same statement. The man asked him how that could be. He replied that she had been taking medicine of Dr. Bolles, and had been digging roots round the yard, and might have got hold of some root that poisoned her. He then went down stairs. In a few moments they all left for his father's. On their way they met the elder brother going for the doctor, who told them she was not yet dead. Defendant was then asked what the matter was. He replied substantially as before, adding that she had not been well for a long time. When they reached the house, she was sitting up in bed, supported by Mr. Salisbury and the hired man, with her feet in the water. Her eyes were open, and were very bright and natural. Mrs. Stafford, who was quite intimate with deceased, approached the foot of the bed, when she looked at her and appeared to recognize her. Her limbs were rigid, her hands half clenched; and she was frothing at the mouth. The mother said, much excited, "Is she going to die here on our hands?" The father replied, "If she does, we must do all that we can to save her, and keep quiet." This last spasm was the most severe of all. It lasted till her death, which took place in about five minutes from the commencement of the last spasm, and thirty minutes from the first attack. During the whole time she neither vomited nor purged. When defendant came in with the Staffords, he did not approach the bed, but sat down in a chair in the opposite corner of the room. When she was in the last spasm, he asked if she was dead. His father replied that she was not then dead, but probably would die. He made no reply to this, but in a few moments asked the same question again. Upon being told that she was dead, he remarked that he hoped "she had gone home to glory, to a better world than this." When she died, Mr. Salisbury straightened her back in bed, until the family physician, Dr. Hyde, who had been sent for, should arrive. The family then went into the kitchen, and conversed with the neighbours about the facts already narrated. Defendant's mother asked him if his wife had been taking poison or anything of the kind. He said, "Not as I know of." She then asked him if there was any poison about the house, that she could get hold of. He said there was none. She then said to him that he was not well, and had better go to bed; but he remained in the kitchen, sitting by the stove. Dr. Hyde now arrived, about half an hour after her death. He states that he saw the body only as it lay; placed his hand on the heart and on the wrist; did not further touch it, but observed nothing which was unusual in its appearance, except its rigidity. The neighbours then assisted in laying the corpse out. As one of them went to the kitchen for some water, she noticed the defendant shutting the door leading from that room to the wood-house, apparently coming in. The body was found quite rigid, so much so that the assistance of two men was required to straighten the limbs sufficiently to remove the clothes. The fingers were not entirely closed, but partially bent, and so stiff that it was impossible to straighten them. Several discolorations were noticed upon her neck. There were three spots on the left side, which looked like bruises, commencing under the ear, and running down under the jaw. On the right side there was one, about opposite the others. They were about the size of the end of one's finger. After she was laid out, defendant retired, considerably before the rest of the family. This was about eleven o'clock. As he seemed to the parents entirely exhausted, one of the hired men present was sent up with him, to render him any assistance which might be necessary. But this man saw no signs of exhaustion, and says he went to bed

without difficulty. Here he rested until half-past four the next morning; then his mother, across whose mind the purchase of the strychnia had passed in the night, went up and asked him what he had done with it. He told her she need not give herself any trouble about it, for it was not in the house. She then asked, "Is it where Frank could have got hold of it?" He replied that it was not very likely she could have found it.

About eight o'clock on Tuesday morning, defendant was seen by an uncle of the deceased at the railway station in Cortlandville. He said to him, "You have started out pretty early." Defendant said that there was cause for it; that his wife was dead; and that she died in a fit. He then drove on to see his wife's father, Mr. Newton, who lived then at Groton about five miles from Cortlandville. He had not gone more than half way, when he met Mr. Newton, on the way to McGrawville. Defendant stopped and said, "Good-morning," which salutation was returned. He then said abruptly, "Frank is dead, and I was just going to your house." Mr. Newton recovered from his surprise in an instant, and said, "What was the matter of her, Daniel?" "She died in a fit," said defendant. Mr. N. replied, "Her mother died suddenly," and asked if she was sick long. Defendant answered, "No, not but a few minutes." He said, in answer to a question by Mr. Newton, that she had not been sick previously, having done her washing the day she died. Defendant then asked Mr. Newton where he would have her buried. Mr. N. said he guessed she had better be buried with defendant's folks, so he could lay beside her. He then asked if Mr. N. had any choice as to the minister who should preach the funeral sermon. When Mr. N. said that he had none, defendant said, "Well, then, we will have the Baptist minister." He then notified his father-in-law that the funeral was appointed for the next morning (Wednesday) at ten o'clock, and said, "You'll be there, won't you?" Upon receiving a reply in the affirmative, he drove off, returning to Cortlandville. Meanwhile deceased's uncle at the depot had heard that she was poisoned; and on defendant's return, he told him of this report, adding, "And I hear that you bought poison and carried it home." He told him that it would be of no use to deny it, for an examination was to be made, and it would be found out. Defendant hung his head and hesitated a moment, and then said that he had bought some arsenic and carried it home. He then rode away, returning again to his father's house. During the day, he, with two hired men, went to Port Watson to dig the grave. The conversation turning on the subject of poison, defendant said she was not poisoned, for there was no poison on the hill that she knew anything about. Later in the day, as he was catching his horses, one of the hired men said he did not see how she could be poisoned; to which defendant replied that he did not see how any person could have a better chance than she did to poison herself. Mr. Newton, who had gone to McGrawville, returned to Cortlandville in the afternoon about five o'clock. After seeing his brother at the depot and consulting with him, he sent his brother's son and son-in-law over to Homer for the coroner. This coroner was a Dr. Gazlay—an eclectic practitioner—who sent word that he would hold an inquest the next morning at eight o'clock, and wished the family notified. Accordingly Mr. Newton went immediately up to Mr. Salisbury's, reaching there about seven o'clock. He asked Mrs. Salisbury if he could see the corpse, and was shown into the room. When he came out, he asked Mr. Salisbury if he could have the privilege of having her opened and examined. Mr. S. said it was of no use; that they were

satisfied what ailed her; that she died in a "spasmodic fit"; and that the funeral was appointed. But he finally consented to allow the examination and to delay the funeral one hour for it. Defendant came in just then, and said, "Newton, what are you going to have done?" Mr. N. told him that he was going to have the coroner there in the morning, and have her examined to see what ailed her. Defendant replied, "It sha'n't be done." Mr. N. said, "Daniel, it must be done." He replied, "It sha'n't be done; we will have the funeral as appointed." Mr. Newton said, "Daniel, a father before a father-in-law, and a father before a son-in-law, and it must and shall be done," and turned to ride away, when defendant said, "It sha'n't be done, now mind that."

The next morning, Wednesday, July 2d, defendant went early to the village. His wife's uncle saw him at the depot between six and seven o'clock. They entered into conversation, and defendant was asked if he knew the cause of her being so sick and dying so suddenly; and if she had not been taking medicine that caused it. He hesitated, and made no reply, until he was told that her family were going to have this thing looked into, when he said, "I don't know as there is any use in bluffing it off; she did take medicine, but she did not take it according to the doctor's orders." He then inquired who the coroner was, and who the jury were that were coming up there. After this he drove to the offices of Drs. Hyde and Goodyear and asked them to be present at the examination. He called at the County Clerk's office and asked if Dr. Gazlay was the coroner. Being questioned as to his wife's death, he said that she was taken with dizziness in the head, and then went into convulsions; that there was no poison about there that she could have got; that she was to have been buried at ten o'clock that forenoon, but Mr. Newton had been there, and had decided to hold an inquest; and that he opposed this examination because he knew that his father-in-law was a singular man, and if poison was found would lay it to him, while he was as innocent of it as the clerk himself. When Mr. Newton reached Mr. Salisbury's house at eight o'clock that morning, defendant had returned home. The coroner arrived about nine o'clock, accompanied by his brother-in-law, who was to assist him. No jury had as yet been summoned. The funeral exercises were proceeded with, and, at their close, the coroner took possession of the body. These two eclectics then commenced to make the post-mortem examination in the presence of twelve or fifteen persons who were in the room. The cutting was mainly done by Dr. Bolles, who opened the body, placed ligatures upon the orifices of the stomach, and removed it. On examining its exterior, a slit was found where it had been cut, which was large enough to admit the finger. Dr. B. called for a bowl, enlarged this opening, and without waiting to ascertain whether this bowl was clean, emptied the contents of the stomach into it. There was perhaps half a pint, containing bread, mixed with leaves resembling lettuce. Water was sent for, and these doctors proceeded coolly to rinse off the inside of the stomach, by dipping it entire in the pail of water and rubbing it with the hand, to see if they could discover arsenic, which Mr. Newton's family and the coroner supposed had been administered. The stomach was found entirely normal in its appearance, with the exception of a few patches, which were slightly congested. A tin wash dish being at hand, the stomach was thrown into it, without examining its cleanliness. Meanwhile a jury had been organized and now came in to view the corpse. Dr. Bolles showed it to them and stated that he saw no

evidence of arsenic in the stomach. They then retired to another room and Dr. B. commenced sewing up the body. This finished, he washed his hands, and went into the jury room. Here he remained five minutes, at least, leaving the two bowls in the room with the corpse. The one containing the stomach was on the floor, the other containing its contents was on a table, not far from an open window. The foreman of the jury questioned the propriety of leaving the stomach and contents where they were so easily accessible, and requested Dr. B. to bring them into the jury room. The dishes were found apparently as they were left. They were brought into the jury room, where they remained until the close of the day's examination. After placing them under the eye of the coroner, Dr. Bolles went down to the village, and obtained two self-sealing jars, closing air tight by a band of India rubber. These he took up to the house, and, after the adjournment, he and the coroner placed the stomach in one and its contents in the other. These jars were then taken by them down to Dr. Bolles' house and given by the coroner to the hired girl, who put them in the cellar. During the autopsy Drs. Hyde and Goodyear called, but told Mr. Salisbury they would not stay, as they had not been summoned.

The coroner's jury had been organized about noon. The first witness examined was Mr. Salisbury, who gave the facts as already narrated. Defendant was then called, who made a similar statement, adding that when he went to his room to retire, his wife complained of dizziness, so that she could not sit up; and that he told her perhaps she would get over it if she would lie quiet. One of the jurors then said that strychnine had been round the house. Consequently, the defendant was asked if he had any poison. He replied that he had purchased strychnine in planting time to soak corn in; that it was never used; and, that he buried it about the time the corn was coming up, where no one but himself knew of it, or could get it. Some one then asked him where it was. He said he would produce it if necessary. The foreman suggesting that it would be well to have it, he started to get it, accompanied by three of the jury. He went from the jury room, which was where his wife died, through the dining room into the kitchen, then into the wood-house and out of the east door to the hog-house, six or eight rods away. While on the way he said that he kept the strychnine in his pants pocket one night after he had it labelled, and then he buried it, because his father said it was dangerous to have in the house. When they reached the hog-house, defendant commenced looking about, saying he had put it in a hole in the ground. He then took up a flat stone and commenced digging. When he had made six or eight strokes, the stone was heard to strike the bottle. One of the jury noticed it on the edge of the hole, opposite to defendant, and rolling down into the cavity toward him. It seemed to have come from a clump of weeds on the border of the cavity. Defendant still continuing to dig, another of the jurors told him to take care or he would break the vial. The one who had first seen it then reached over and picked up the bottle, when defendant said, "What has become of the label? There was a label on it when I buried it." The bottle had dirt on it as if mud had been spattered on by the rain of the previous night and dried. It was easily brushed off, and the vial was then taken into the house and given to the foreman of the jury, who handed it to the coroner.

After the jury had left the house, Orlando's wife picked up on the step as she was coming in at the west door, a label having a skull and cross

bones in the centre, the word "strychnine" at the top, and "poison" on each side. She went into the dining room and handed it to her husband. He took it, and, after examining it, threw it on the floor. A day or two after this, Esther found it in the dirt as she was sweeping the dining room. She showed it to her mother, and by her direction threw it into the fire.

The next morning, Thursday, the coroner, Dr. Gazlay, called at Dr. Bolles's house for the jar containing the stomach. The hired girl went to the cellar, and found both in the same position in which she placed them. The one containing the stomach was brought up, and given to the coroner. He called for some spirits; whiskey was handed him, with which he filled the jar. He then took it up to Mr. Salisbury's, to the inquest. Dr. Frederick Hyde, Professor of Surgery in the Geneva Medical College, who was the family physician, had been summoned, at the instance of the jury, to make an examination of the brain. He arrived at the house soon after the coroner. Three other regular physicians of the place accompanied him. After the examination of one or two witnesses, Dr. Hyde, assisted by one of his colleagues, proceeded to their investigation. The skulleap was removed and the dura mater reflected. The brain appeared normal, though its vessels were somewhat congested. It was gradually sliced away, without observing anything of importance until the ventricles were reached. One of these, the left, was filled with a bloody serum, in quantity about an ounce and a half: the right contained less, hardly more than the normal quantity. When they came to the base of the brain, considerable congestion was noticed there and about the spinal cord, and so much serum that, as Dr. Hyde testified, the cerebellum seemed to be floating in it. At the conclusion of Dr. Hyde's testimony, the jury adjourned until they should be called together by the coroner. Several times during these examinations, defendant said to Dr. Bolles, "Have you not got most through with that body, so we can bury it?" Mr. Newton had reached Mr. Salisbury's about 8 o'clock that morning. Defendant met him at the door and said, "What about that strychnine?" Mr. N. said, "Daniel, I don't know yet." The same afternoon defendant said to him, "Newton, have you seen where they found the strychnine?" Mr. N. said "No," when defendant said, "I will go and show you." He went to the hog-house and pointed out the hole from which the vial had been taken. He then said that they had a cosset lamb, and that deceased might have been out with it and found the strychnine, and taken it herself before she went to bed. Mr. N. replied that would have been impossible. Defendant said, "What will they do with me, Newton, if they find this strychnine in her stomach?" "That depends on the testimony we can produce," replied Mr. Newton.

After the adjournment of the jury, Coroner Gazlay took the jar containing the stomach down to Dr. Bolles's house. He called for the other jar, wrapped them both up, one in wrapping the other in newspaper, tied them with twine, and took them to his house in Homer. There he placed them in his cellar, on a box of sand, covering them over with an old cheese box. Here they remained until the next Wednesday, the ninth of July, when they were taken by Dr. Gazlay over to Manlius, Onondaga County, and given to Dr. Wm. Manlius Smith for analysis. The facts were briefly narrated to him, and the jars, which were left in his possession, were placed under lock and key. The next morning a small portion, about half an ounce, of the contents of the stomach, which was found to be very acid,

was examined with a view to the detection of strychnia. One-third of the solution which was obtained from this small quantity gave unequivocal evidence of the presence of this alkaloid. This solution left an exceedingly bitter taste in the mouth, lasting for half an hour. A few days after this, another portion of the contents of the stomach was examined by a different process, but with the same result. Strychnia was certainly detected. Deeming it of much importance that a careful examination should be made of the other organs of the body, particularly as the stomach and its contents had been so carelessly protected from outside interference, Dr. Smith suggested to the coroner the examination of the body. On Thursday, the 17th of July, this examination took place in presence of the jury, the examination being conducted by Dr. Smith. The body was still quite rigid, and the limbs stiff. The heart was entirely empty, with not a trace of blood about it. The bladder was also entirely empty. The uterus was of its natural size, and contained nothing. Dr. Smith removed a portion of the œsophagus, duodenum, and liver, with the heart, and about four fluid-ounces of bloody serum from the cavity of the chest. These he placed in clean jars, and retained in his possession until he reached home. After the body had been reinterred, Dr. Smith gave his evidence as to the existence of strychnia to the jury. They then retired, and rendered a verdict "that the said Frances E. Salisbury came to her death by poison; * * * that the poison was strychnine, the same being swallowed; and that the testimony and circumstances of the case point very strong to Daniel Salisbury, the husband of the deceased, as the guilty person."

In consequence of this verdict, Daniel E. Salisbury was arrested and taken before the justice, where an examination was had, lasting four days, and he was committed to await the action of the grand jury. He was indicted October 15th, 1862, and the case was called at a Court of Oyer and Terminer January 5th, 1863. The prisoner was arraigned, pleaded not guilty, and demanded a trial. As the defence was not prepared to try the case, the judge granted a postponement to the next term.

When Dr. Smith arrived home with the parts he had removed from the body, he set about making the final analysis. He had obtained from the coroner the vial found near the hog-house, the contents of which the defendant had purchased for strychnia. The processes followed in this analysis Dr. Smith has kindly furnished me, and I am therefore enabled to give them in his own words.

"*Method of Analysis.*—As a preliminary experiment, about a tablespoonful of the contents of the stomach was placed on a small filter. The filtrate, which had a marked acid reaction, was neutralized with a little potassa, and then shaken with some chloroform. After subsidence, a portion of the chloroform was removed with a pipette, and evaporated on a white porcelain slab. The residue from the evaporation of the chloroform was tested with sulphuric acid and bichromate of potassa, and yielded an intense and beautiful blue coloration, passing through purple into red. Another small portion of the chloroform, on evaporation, gave a residue having a decidedly bitter taste, which remained perceptible about half an hour.

"Subsequently, the remainder of the contents of the stomach was placed in a small dialyser of parchment paper, supported by a gutta-percha rim, and floated on the surface of about two quarts of rain water, in a glass jar about six inches deep. After the lapse of three days, the diffusate was evaporated in a porcelain capsule over a water bath. Meanwhile, the dialyser was placed on the surface of a fresh quantity of water. This, after the lapse of two or three days, was added to the residue of the previous evaporation, and reduced to a

small bulk, about four fluidounces. The concentrated liquid was neutralized with ammonia, shaken with about an ounce of chloroform in successive portions, the chloroform evaporated and the residue tested. It gave the proper colours of strychnia; and in their due order, when treated with sulphuric acid and bichromate of potassa, or peroxide of lead, or peroxide of manganese. A portion of colouring matter that obstinately adhered to this residue prevented, apparently, the production of good crystalline forms for inspection under the microscope. For the same reason, the weight of the strychnia obtained from the contents of the stomach was not determined.

"From the stomach itself, treated in the main as hereafter described for other portions of the body—but several months after it came into my possession—slight traces of strychnia were thought to be indicated by the colour tests, but so undecidedly as not to be considered of any weight.

"The general plan of operating on the blood, oesophagus, duodenum, and heart, was to digest them with dilute chlorohydric—in some cases dilute acetic—acid, in a covered glass vessel, in a water bath, for several hours, till the tissues were a good deal disintegrated. The resulting pulp was then placed on a filter, and, after draining, washed with water. The filtrate was concentrated, its acidity neutralized with ammonia or potassa, and chloroform agitated with it. The residue from the evaporation of the chloroform gave no decisive response to the colour tests for strychnia. These residues were, however, considerably coloured, nor did I succeed in satisfactorily ridding them of the colour. The plan recommended by some experimenters of heating gently the residues in contact with a small quantity of sulphuric acid to char the colouring matter, &c., did not succeed in my hands in disposing of the colouring matter.

"With the liver a somewhat different course was pursued. Already considerably softened by decomposition, it was cut up as finely as possible with scissors, and digested with dilute chlorohydric acid in a glass vessel, in a water bath at near the boiling temperature, during the daytime for several days. The pulpy mass resulting remained four or five months longer in the jar, before further operations were commenced on it. It was then transferred to a dialyser of parchment paper, and dialysis made with about two gallons of water, in two successive operations, each of about three days. The mixed diffusates were evaporated to near dryness on a water bath. The residue was treated with strong alcohol, which left behind a considerable quantity of chloride of ammonium, and but little else apparently. The residue from the evaporation of the alcohol was treated with successive small portions of water, till nothing more was taken up. The watery solutions were mixed, evaporated to the bulk of half a pint, and, after neutralization, shaken with an ounce of chloroform. The chloroform did not separate well, but formed a persistent emulsion. Several ounces of ether were then added, and, after agitation and repose, poured off and evaporated by a gentle heat. The residue was coloured highly of a yellowish-brown hue. A portion of it, treated with sulphuric acid and bichromate of potassa, gave a change of colour, but so masked by the brown colouring matter present as to give no satisfactory indications. The residue had a bitter, mixed with a nauseous fatty taste. Some very dilute acetic acid was now added to the residue from the ether, and left, after proper agitation, a considerable amount of a brownish greasy substance adhering to the sides of the capsule. The acetic solution was neutralized and treated with ether, and the process repeated several times. At length a solution was obtained which, when neutralized and shaken with chloroform, gave on evaporation of the chloroform a residue not much coloured, which, treated with sulphuric acid containing a small amount of bichromate of potassa, gave a distinct though faint purple coloration, passing into equally distinct though faint red. A friend was called upon to observe some of these tests, and, without being told what colours were expected, named them as above, purplish passing into red.

"It should be said that after each repetition of evaporating the ether, as before mentioned, a portion of the residue was tested with the sulphuric acid and bichromate of potassa. A change of colour was produced in every case. At first, its character was obscured by the brown colouring matter from the

tissues; but at each successive evaporation, as this brown matter became less, the character of the colours became less and less obscure, till, on the evaporation of the final chloroform solution, there was no hesitancy in deciding as to the shades of colour produced and their changes.

"That the colours obtained in the experiments with the liver were due to the presence of minute portions of strychnia, and not to colouring matter derived from the tissues, may be inferred from the fact that they became more and more distinct as the colouring matter was more and more eliminated by the repetition of the evaporating processes.

"I believe none of the final residue was tested, it being all consumed in the colour testings."

(Signed) Wm. MANLIUS SMITH.

I received the summons to attend the trial on the 6th of June. I was then lecturing at the Albany Medical College, and on Friday, the twelfth, left Albany for Syracuse. The next day, Saturday, I went over to Manlius, visited Dr. Smith's laboratory, and, with a residue which he stated was obtained from the contents of the stomach, confirmed his opinion of the presence of strychnia, both from the colour tests and the exceedingly bitter taste. I observed traces of a crystalline character, but the form could not be determined. As a further confirmation of the evidence, we agreed to try the physiological test of Dr. Marshall Hall. Three active frogs, of equal size, were procured. To the first was given a solution of nux vomica, computed to contain one-twentieth of a grain of strychnia. This was injected into the cavity of the abdomen, the frog placed in a dish of water and watched. The main purpose of this experiment was to ascertain exactly the action of this alkaloid, and thus to get control of the phenomena. In twelve or fifteen minutes, the frog became convulsed, the spasm being quite energetic. In a few minutes more, he lost all power over the lower limbs, and they remained extended. To a second frog, a third of the solution obtained by dissolving the residue from the contents of the stomach in water containing a little acetic acid, was given by injection, and the time noted. In eight minutes the spasms came on, the convulsions being much more severe than in the case of the first frog. In twelve minutes he turned over on his back, and was dead in three-quarters of an hour. An acetic solution of one-twentieth of a grain of the white powder found in the vial on the prisoner was prepared, and injected, as in the other cases, into the third frog. He became tetanized in nearly the same time with the last, and expired in about forty-five minutes. The first frog did not die, but recovered. From these experiments, it was conjectured by Dr. Smith, though roughly, it must be confessed, that the strychnia which remained from previous colour testings, at the commencement of the physiological experiments, was at least one-tenth of a grain. Thus there seemed not only no doubt of the presence of strychnia, but even its quantity was estimated.

On Monday, June 15th, the trial commenced at Cortlandville. The cause was called at two o'clock in the afternoon, and the rest of the day was consumed in empanelling the jury. The counsel for the government were Geo. B. Jones, Esq., District Attorney, Hon. Chas. Andrews, of Syracuse, and Milo Goodrich, Esq., of Dryden. M. M. Waters and F. D. Wright, Esqrs., of Cortland, appeared for the defence. The trial occupied the entire week. From the evidence there produced, we have gathered the facts given in the preceding statement. The counsel for the prosecution offered no theory, but sought to prove that defendant and his wife did not live happily together; that he had purchased strychnia, but did not use it

for the purpose intended ; that this alkaloid was administered to the deceased by the defendant ; that the chemical evidence was conclusive as to its existence in the body ; and that it was taken during life, as the symptoms, being those of tetanus by strychnia, abundantly established. On the other hand, the defence, as well by their evidence as by their argument, endeavoured to show that the symptoms were such as might have been caused by an inflammation of the brain ; that, while strychnia might have been found in the body, that was no evidence that it was taken during life : it might have been placed there by design after death, there having been abundant opportunity ; and that, should it be considered as proved that it was taken before death, there was evidence to show that it was taken for purposes of suicide. The presiding justice, Hon. Chas. Mason, said, in his charge to the jury : "I need not say to you, gentlemen, that from the evidence in this case there can be no doubt at all but that strychnine was discovered in the contents of this stomach after it passed into the hands of Dr. Smith ; and there is probably very little doubt, indeed, but that he discovered satisfactory evidence of the presence of strychnine in his analysis of a portion of the liver. When you come to this branch of the case, gentlemen, you are resting upon evidence that never lies. These chemical tests are never mistaken. They do not have the uncertainties about them which much of the evidence which is brought before our judicial tribunals have ; for, in regard to the questions which are here tried, the most to which we can ever attain is a reasonable moral certainty. But in regard to the experiments of chemists, probability is excluded from the investigation. The ascertainment of positive certainties is its result. That the analysis of the contents of this stomach, and of portions of the liver, disclosed the fact that there was strychnine found in this body after death is, therefore, beyond doubt. Did the subsequent investigations, in relation to the contents of this stomach and other portions of the body, exclude every possible chance of its having got there after death, we might say that the proposition that this woman died of strychnine was about as well established as evidence could ever establish any fact in a court of justice." After the charge, the case was given to the jury, and they retired. In an hour and a half they came into the court-room and returned a verdict of "Guilty." The prisoner, who had manifested entire indifference throughout the trial, did not seem to be awakened to any sense of feeling by this verdict. On the next Monday, Judge Mason pronounced the sentence of the law upon him : "That you, Daniel Salisbury, be hung by the neck on Friday, the 14th day of August next, between the hours of 10 and 2 o'clock, until you are dead, and may God have mercy on your soul."

The counsel for the prisoner made strenuous exertions to procure a commutation of the sentence of the court. A petition to Governor Seymour, signed by the judge, ten of the jurors, and many of the citizens—urging this on the ground of the weak mental capacity of the prisoner—was prepared and forwarded to the Executive. The sentence was accordingly commuted to imprisonment for life. As early as the 19th of July, however, the prisoner, believing that his time to live was rapidly shortening, made a confession of his guilt to the Rev. Mr. Simmons, pastor of the Baptist Church, where his father attended. Subsequently he made another and more full confession to the sheriff of the county. It is as follows :—"Daniel Salisbury says that three or four days previous to the death of his wife, he took a large powder of strychnine out of the vial and put it into

his vest pocket; that on the night of his wife's death, he went into the bedroom to go to bed. She had already gone to bed. He said to her, at the same time laying the powder on the stand, 'Frank, here is some more medicine for you.' She had been taking medicine with a view to produce an abortion, as he had led her to believe herself *enceinte*. He gave her the powder, and at the same time handed her a teaspoon. She put the powder into the teaspoon. He then gave her a cup of water. She took the powder into her mouth dry; at the same time, or immediately after, she drank the water. He then undressed himself to go to bed. She said, 'O Daniel, what awful bitter stuff this is.' As soon as he got into bed it took effect, and she went into convulsions. He was alarmed, greatly excited, and says he would have given all the world if he had not given the strychnine. He has little recollection of what he did afterward, but says it could not have been more than two or three minutes after she took the poison before she went into the first spasm. He says that the only motive he had for getting rid of his wife was, that he did not want to live with her." We cannot believe that Gov. Seymour would have commuted the sentence had he been aware of this heartless confession. Nor can we believe that the prisoner would have made the confession had the commutation of his sentence preceded it. We must, therefore, conclude that the confession was unknown to Governor Seymour when the application was granted.

In reviewing this important trial, we notice several points of great interest to the medical jurist. And first, the time which elapsed after the poison was taken before it produced its effects, was very brief. On the coroner's inquest, Mr. Salisbury and his wife both testified that it was ten minutes after the defendant went to his room before they heard the scream. It being important to note the time more accurately, the father, in presence of the defendant's counsel, who held the watch, repeated the exact operations of that night. Read the letter, handed it to his wife, took off his boots and stockings, filled his pipe, lighted it, took a few puffs, received the letter again from his wife, and read the first line. This repeated several times, with as great accuracy as possible, gave from 2 min. 50 sec. to 3 min. 8 sec. as the actual time intervening between the time when the defendant went to his room, and that when the scream was heard. To this length of time, therefore, Mr. Salisbry testified on the trial. It is corroborated by the testimony of the hired man. He stated that on the night referred to, the prisoner and himself took off their boots together in the kitchen, and then went into the dining-room; he went up stairs, took off his overalls and vest, stripped down the bedclothes, and had just got into bed, when he heard the scream. He judged the time to be not more than three or four minutes. To the same tenor is the confession of the prisoner. When we remember how slight is the dress of a labouring man in summer, especially on a farm, it must appear that the time spent by Daniel in preparing for bed could not have exceeded two minutes. He, himself, says it was not over three. If this be so, and there seems to be no good reason to question it, then we have in this case the shortest time on record for the operation

of strychnia; at least in any authority I have been able to consult. The shortest case mentioned by Dr. Taylor is that of Dr. Warner, where the spasms came on in five minutes.

With regard to the character of the symptoms, the evidence is very clear. The deceased was in spasms when the father entered; her muscles were rigid, and twitched under his hands when he attempted to raise her; her body was stiff, her head was thrown back, her breathing was very hard, and she had violent cramps in the abdomen. There would seem to be no doubt that these spasms were tonic, and that they resulted from tetanus. Yet medical men were found to testify, on the part of the defence, that "there was nothing in these symptoms decidedly characteristic of poisoning by strychnine." But had inflammation of the brain set in, as the defence claimed, it would undoubtedly have been preceded by severe pain, such as could not fail to attract the attention of the family. So far from this, however, deceased had only a slight headache the day of her death; such an one as she was subject to not unfrequently. Nor did she complain particularly of her head while in the spasms. Moreover, in convulsions from disease of the brain, the spasms are clonic in their character. But the evidence mainly relied on to establish inflammation of the brain depended on its post-mortem appearances. "From the appearance of the brain, I should judge that death was caused in this case by inflammation of the brain, such as convulsions," said Dr. Hyde. These appearances were—serum in the left ventricle, rather more than normal in quantity; considerable congestion at the base of the brain, and some effused serum; and, what was considered of more importance, Dr. Hyde testified that he found *slight* depositions of lymph on the superior portions of the brain; he could not be positive that he saw any depositions of lymph at the base of the brain; but his impression was that he did find them. So far as the first part of these evidences is concerned, we may be sure that the effect was mistaken for the cause: for Dr. Taylor says, "Among the *internal* appearances (of strychnia poisoning) are congestion of the membranes and substance of the brain, as also of the upper part of the spinal marrow."¹ In a case mentioned on the same page, "the upper part of the spinal marrow was very red superficially, and the canal appeared to be full of serum."² Again, he says, "Of the appearances produced in poisoning by strychnia * * * * congestion of the membranes of the brain and spinal marrow is probably the most common."² So far as the deposition of lymph is concerned, the three other physicians who assisted at the autopsy, testified that they did not see this lymph, though their attention was called to it. We must then conclude that there was no such indication. But were all other evidence wanting, that derived from the perfect consciousness of the deceased,

¹ Treatise on Poisons, Am. ed., p. 685.

² Ibid., p. 686.

is abundantly sufficient to show that the cause of death was not convulsions occasioned by brain disease. When the mother entered the room, deceased spoke to her; she afterwards tried to reply to Mr. Salisbury, showing that she understood his question; even during the last spasm, she looked up at a friend who came in and, by her eyes at least, seemed to recognize her. In convulsions, on the contrary, where the brain is so seriously affected, we have delirium and raving, or entire unconsciousness and coma. Tetanic spasm is the only spasm admissible on the evidence. That this tetanus did not arise from idiopathic or traumatic causes, we need not stop to prove, as this question was not raised by the defence. The rapid accession and conclusion of the symptoms precluded any such supposition.

The careless manner in which the organs removed from the body for the purposes of analysis were protected from outside interference deserves the severest reprobation; and no less does the unheard-of proceeding of the operator, in washing the stomach in a pail of water, rubbing the mucous surface with his hand, to see if he could detect arsenic, and then placing the stomach and its contents in bowls which were not even examined as to their cleanliness. In consequence of this carelessness, had it not been for Dr. Smith's forethought in disinterring the body and removing other portions of it for analysis, serious doubts might have been thrown on the prisoner's guilt, and thus the course of justice have been frustrated.

The exact amount of strychnia administered in this case is not known. The amount purchased was probably between 18 and 19 grains. The amount in the vial when given to Dr. Smith was between 12 and 13 grains. No evidence was introduced to show that defendant used any for any other purpose. We must conclude, therefore, that he gave deceased not far from six grains. Death ensued in thirty minutes.

In the analysis, strychnia was suspected from the fact that some of this alkaloid had been purchased by the defendant; and in a single half ounce of the contents of the stomach, Dr. Smith was able to detect it. The evidence which he obtained in the final analysis, confirmed as it was by my own observations, leaves no reasonable doubt of its existence there, and, therefore, of the possibility of detecting it while yet unabsorbed. But there was quite as certain evidence of the existence of strychnia in the liver, though, of course, the quantity was much smaller. The colours were faint, but *distinct*. Hence we may conclude that strychnia is absorbed in quantity sufficient to be readily detected by chemical means. The methods employed are not open to the slightest objection. Dialysis, the method of Graham, and afterwards separation by chloroform, as proposed by Rogers and Girdwood, leave nothing to be desired. Hence we cannot agree with Dr. Taylor, when he says: "Strychnia is one of the alkaloids which in some cases is either speedily eliminated, or, if deposited in the tissues, is so altered in its nature, or diffused in so small a quantity, that the most

refined chemical processes at present known cannot separate it."¹ And again he says that, up to May, 1856, "in no one instance had strychnia been obtained from the tissues of a person poisoned by it, and in the greater number of instances it had not even been found in the stomach in an unab-sorbed state."² "No chemist has yet succeeded in separating the alkaloid strychnia in an absorbed state from the blood, tissues, or soft organs of the body."³ In consequence of which, he concludes that, "although it may be detected in the stomach (if carefully preserved), it cannot be detected in the absorbed state in the blood and tissues."⁴

On the 17th of March, 1864, I received a letter from Dr. Smith, in which he says: "I inclose in this a small package in which are two fragments of porcelain, on each of which is a residue from the evaporation of some chloroform that had been shaken up with the preparation of the liver from Mrs. Salisbury." He describes the preparation of these specimens as follows: "The experiments already mentioned were finished in the winter of 1862-3. The pulpy mass from the liver remained undisturbed in the dialyser, with no water beneath, till June, 1863. It was then found moist, but not at all mouldy, and not particularly disagreeable in odour. It was removed from the dialyser, and, after being thinned with water, was placed in a glass funnel, the throat of which was obstructed by a mass of flax fibres. The liquid very slowly passed through. Occasionally fresh portions of water were added to the contents of the funnel, and after several weeks about a pint of brownish liquid had collected in the bottle beneath. The whole remained in the same situation till the setting in of winter, at which time the liquid had been reduced by spontaneous evaporation to a little over four fluidounces. About the last of February, 1864, this liquid was neutralized with ammonia, shaken with chloroform, the chloroform evaporated, the residue treated with acidulated water, again neutralized, and shaken with chloroform. A repetition or two of this process gave a residue showing clearly the purplish colour passing into red, when treated with the appropriate reagents. It had also a slight, though plainly perceptible, bitter taste." On testing the residues which Dr. Smith sent me, I obtained very distinct colorations, purple passing into red; confirming his statement that strychnia existed in the liver. In view of these facts, Dr. S. goes on to say: "If there is no mistake, this experiment settles the fact that liver, removed from a body poisoned with strychnia, after a fortnight's burial, in hot weather, and left a week or two more in a jar, then cut up and treated with chlorohydric acid and water in a water-bath, left standing three or four months in a jar, then placed in a dialyser over five quarts of water for three days, and then over five quarts of fresh water for another two days, still may retain enough strychnia to give the appropriate colours with

¹ Treatise on Poisons, p. 77. ² Ibid., p. 75. ³ Ibid., p. 74. ⁴ Ibid., p. 695.

sulphuric acid and bichromate of potassa." Two points of considerable interest are established by this statement: First, that strychnia resists in a good degree the putrefactive and other changes of the tissue in which it is stored; and second, that the process of dialysing does not fully separate strychnia from the disintegrated tissues of the body; for quite as decided, and Dr. Smith thinks more decided, traces of strychnia were obtained from the pulpy mass of disorganized liver from the dialyser than were obtained from the diffusate. If this latter point shall be proved true for other poisons, this process cannot be relied upon to discover them when very small in quantity.

In closing the report of this trial, I may safely reiterate the statement with which I commenced, that "there are special features in it of great value to the toxicologist." It is complete. The circumstances were very fully elicited, the symptoms very carefully noticed, the *post-mortem* appearances completely described; the circumstantial evidence was therefore very strong. And, to crown all, the confession of the prisoner afforded a means of verifying our suppositions, a privilege not often permitted. It is from this completeness that this trial will be valuable to the medical man who has such cases to investigate. If it shall assist in the conviction of but a single felon, the time and labour expended in the preparation of this report will be abundantly rewarded.

ART. VII.—*Oil of Aniseed as a Deodorizer of Tersulphide of Potassium.*
By W. S. W. RUSCHENBERGER, U. S. Navy.

A wish to use a solution of sulphuret of potassa as a lotion to a lady's skin led me to seek means to overcome or neutralize the odour of the preparation. Among other substances, I tested to a limited extent the deodorizing properties of the permanganate of potassa. For the purpose I prepared a solution of the salt, from the manufactory of Mr. Morson, London, in the proportion of two parts to one thousand of distilled water by weight.

This solution was added to peppermint-water, to camphor-water, to a ten-grain solution of tersulphide of potassium, and to spirits of turpentine, in the proportion of about one part to two. There was no perceptible change of odour in either case, even after exposure to the air during twenty-four hours. The beautiful magenta colour of the permanganate solution was wholly discharged in the mint-water, with a flocculent, light brown precipitate; in the turpentine, with a dark brown precipitate; and in the sulphuret solution, without precipitate. In the camphor-water the colour

remained unchanged, but there was a very slight brown precipitate after standing twenty-four hours.

To the mint-water, camphor-water, and solution of tersulphide of potassium the solution of permanganate was added in excess. After exposure to the air during twenty-four hours, the characteristic odour of each article still adhered to it.

Recollecting that when I was engaged in anatomical studies, many years ago, I removed the cadaveric odour from my hands by washing them with camphorated tincture of opium, more expeditiously than by any other material then known to me, I added to a solution of tersulphide of potassium (sulphuret of potassa), ten grains to a fluidounce of distilled water, twenty drops of *opii tinctura camphorata*. A very feeble but totally different odour remained; its offensiveness had disappeared, and the lotion was used without provoking any remark about its smell.

Which one of the constituents of the paregoric is the deodorizing agent? A solution of benzoic acid added to a solution of the tersulphide caused a white precipitate; the tersulphide was decomposed, and the offensive odour was intensified.

About a fluidrachm of anise-water (prepared after the manner of preparing camphor-water) was added to an ounce of the ten-grain solution of the tersulphide of potassium, and the odour instantly changed its character, and was no longer offensive. A like effect followed the addition of a single drop of the oil of anise to two ounces of the same solution. No perceptible chemical change occurred in the solution.

A single drop of oil of anise was rubbed with a drachm of lard, and then five grains of tersulphide of potassium in fine powder were thoroughly mixed with it, to form an ointment, which was without offensive odour.

The oil of anise employed in these experiments was more than two years old.

Is the phenomenon just mentioned due in any manner to the quality possessed by the vapour of the oil of aniseed to intercept radiant heat? Professor Tyndall, in his recent work, *Heat considered as a Mode of Motion* (New York edition, p. 374), states that, regarding dry air at the tension of one atmosphere as unity, the absorbent power of the vapour of the oil of aniseed in intercepting radiant heat is represented at 372, which is greater than that of any other essential oil mentioned by him in this connection.

Whether this is to be regarded as an instance of catalysis, and the presence of the oil simply arrests the evolution of hyposulphuric acid, is a question to be determined. Chemists may or may not regard these suggestions worthy of consideration. I cannot attempt to account for the phenomenon.

NAVY YARD, BOSTON, MASS., April 2, 1864.

ART. VIII.—*Inquiry into the Correctness of the Belief that Prof. Bibron was the Inventor of the Antidote which bears his Name.* By S. WEIR MITCHELL, M. D.

WHILE I was engaged in studying rattlesnake venom and the supposed antidotes, Doctor, now Surgeon-General, Hammond called my attention to the remedy known as Bibron's antidote.

Somewhat later I was struck with the strange way in which a knowledge of this famous remedy reached the physicians of this country. Accordingly, I took some pains to trace up the subject beyond the printed authorities. The result was so singular, so unlooked for, that I hesitated to speak publicly until I had traced the matter to its first source. Unfortunately a link has been lost by the death of Prince Paul of Wurtemberg, and I now publish so much of this extraordinary history as I have been able to unravel. I hope that my statement may attract notice from some one who will be able to supply what is wanting. I believe that the story of Bibron's antidote, as I shall now relate it, is one of the most singular in the annals of medicine.

The first notice in print of Bibron's antidote is the following:—

“*Experiments with Bibron's Antidote to the Poison of the Rattlesnake.* By Wm. A. Hammond, M. D., Assist. Surg. U. S. A.—Some four years ago, Prince Paul of Wurtemberg, the celebrated naturalist, communicated to my friend Mr. De Vesey the results of some experiments performed before the French Academy of Sciences by Prof. Bibron, relative to an antidote to the poison of the rattlesnake. According to Prince Paul, Prof. Bibron allowed a rattlesnake to bite him in the lips and cheeks, etc., and, by taking the antidote discovered by him, prevented all alarming symptoms, and, in fact, suffered no inconvenience therefrom.”—*Am. Journ. Med. Sci.*, Jan. 1858.

The formula and mode of use are then stated.

Dr. Hammond, after some experience, formed a favourable opinion of the antidote. His great authority at once introduced it to the profession, and several short papers, by Dr. Coolidge and others, detailing successful cases, were made public.

I myself experimented with it (see Smithsonian essay *On Venom of Rattlesnake*, and also *North Am. Med.-Chir. Rev.*, March, 1861, “On the Treatment of Rattlesnake-Bites, by S. Weir Mitchell, M. D., etc.”), but did not form so indulgent a view of its value. During the interval, the remedy was placed on the supply table of the U. S. army.

A year ago, Mr. De Vesey (Xantus) promised me the letter in which Prince Paul informed him of the antidote and its inventor. This letter I received a month ago. It runs as follows, literally translated:—

“Dr. Bibron, in Paris, has invented a most excellent remedy for snake-bites, with which he made several experiments. Among others, in the Palais Royal, before a large audience, he caused himself to be bitten in the lips and throat by the great *crotalus horridus*, and cured it immediately. Also, I made several

experiments on dogs and cats. Will you not also try some, and have the kindness to communicate your results? The recipe is as follows: Iodide of potassium gr. iv; corrosive chloride of mercury gr. ij; dissolve in bromine 3v. Dose, ten drops. Repeat if needed."

This letter dates back to 1853 or 1854. It is the first mention of the antidote in any form. Recently I addressed a letter to M. Aug. Dumeril, Musenm of the Garden of Plants, Paris, the son of Bibron's colabourer, Prof. Dumeril, and himself a distinguished observer. In this letter I asked for information as to Dr. Bibron in connection with the antidote. I received a very courteous reply, of which I give below a translation.

"MUSEUM OF NATURAL HISTORY, PARIS, June 14, 1864.

[After alluding to a former letter, which has been lost, M. Dumeril says:—]

"I have still to repeat that, although I knew Bibron intimately, I never heard him mention the antidote. Neither have I ever heard my father, either in conversation or in lectures, allude to an invention which, were it real, would be well known in France, whilst, in fact, no one knows anything about it. In the museum records it is also unknown, nor in his family is there any trace of this matter, which appears to have been so widely known in America, where, no doubt, his name has lent increased fame to the antidote. This supposition, which you yourself made in a former letter, seems to me very probable. In the same letter you asked me to write concerning the matter to Prince Paul. This I did, in a letter of March 7, 1862, thus addressed: 'A Son Alt. Roy, Monseigneur le Due Paul Guillaume de Wurtemberg, au Palais de Mergentheim (Wurtemberg).' This letter came back to me with the statement that the Prince was dead."

In speaking of the details given by the Prince in his note to Mr. De Vesey (Xantus), he adds:—

"Bibron never lectured at the Garden of Plants. He gave a course of general natural history to young lads in a school (Ecole Turgot), and certainly it was not before such an audience that he would be likely to exhibit this sort of juggling.

"Permit me to add that it is almost a calumny against a character so frank and loyal as that of this distinguished man, to suppose him capable of possessing the knowledge of so precious a remedy without hastening to make known its composition to the public through some scientific journal. MM. Milne Edwards and Flor. Prevost, connected with this museum for fifty years at least, are absolutely ignorant as to the antidote. On no occasion have they ever heard Bibron speak of it.

"You are welcome to make such use of this strong negative evidence as seems best to you."

The writer of the above speaks of his evidence as negative, but this hardly describes the full force of the statements which he has collected. Certainly, if Dr. Bibron had been the inventor of the antidote which bears his name, the fact would have been known to Milne Edwards and to the family of the deceased naturalist. Nowhere in the world would such snicidal experiments as he is said to have made have been less likely to be concealed than in Paris, and nowhere else would they have been so sure to attract the largest public notice. It appears to me therefore impossible that Bibron could have been the inventor of the remedy in question. Who, then, was the rightful father? Not Prince Paul, one would suppose, or

else, supposing it valuable, he would have asserted his rights, soon or late, unless we conceive that he devised the antidote and did not desire to claim its paternity, which appears scarcely a plausible view. To imagine this would be, moreover, to affix a stigma to one whose career gives us no right to make such a supposition, and who is now beyond the power to answer an unjust reproach. And here all possible hypothesis ends. Bibron is said by Prince Paul to have invented the antidote. Both are dead, and we have shown that the former has no claim to the doubtful honour. We leave the question, therefore, to the ingenuity of others, in the hope that this curious piece of medical history may find in the future some more satisfactory conclusion.

Since writing the above, I have received a letter on the subject from Prof. D. Brainard, of Chicago. The following extracts will prove of interest. Prof. Brainard says:—

"In December, 1853, I presented a paper to the Academy of Sciences (Paris) on the use of iodine in snake-bite. Not having the serpents, I could not repeat the experiments, and consequently got no report. I then used the iodine with woorara as an antidote to that poison, and submitted an additional report. Magendie, the chairman of the commission on this subject, dying, there was no report upon it.

"M. Reynoso then took up the subject, and stated that bromine was a more perfect antidote to the woorara than iodine. On his paper M. Flourens made a report in 1855, in which my experiments are correctly reported. . . . Bibron probably saw my experiments. . . . Bibron's antidote came probably from my experiments and Reynoso's paper. Who put in corrosive sublimate, I do not know."

This new phase of the matter requires some brief comment. We have made it clear that Bibron may be left out of the case. He had nothing to do with the antidote. Is it possible that Prince Paul could have confused Prof. Brainard with Dr. Bibron? It does not appear probable, because, to learn anything about the connection of bromine with the matter, he must have read Reynoso's paper, or Flouren's report on it, and in these Prof. Brainard's name is distinctly and repeatedly used, but not in relation to bromine, whose supposed value as an antidote originated with Reynoso.

But who, finally, as Dr. Brainard asks, put in the very needless corrosive sublimate of this heroic prescription? And here once more we consign the question to the ingenuity of the profession and the chances of future elucidation.

REVIEWS.

ART. IX.—*Medical Diagnosis, with special reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases.* By J. M. DA COSTA, M. D., Lecturer on Clinical Medicine, and Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia; Corresponding Member of the New York Pathological Society, &c. &c. Illustrated with Engravings on Wood. Philadelphia: J. B. Lippincott & Co. 1864. 8vo. pp. 689.

VERY few books have been more wanted than thorough, correct, and available manuals of medical diagnosis. The separation of this department does not seem to have been fairly attained until recent times. The subject, of course, is fundamental, and essential to any scientific consideration of diseases; but its study has always been interwoven, more or less, with that of other topics, equally essential, and naturally connected with it. Thus, with the ancient writers, as in the Prognostics of Hippocrates, diagnosis was made subservient to prognosis; or, as in the treatise on the Causes and Signs of Disease, by Aretaeus, adjunct to etiology; or, else to pathology, as in the work *De Locis Affectis* of Galen. Although the aphorisms of the earliest of these writers, and the works of Caelius Aurelianus and of other ancient authorities contain much concerning the signs of disease, yet we do not know of a single special treatise upon diagnosis, so early even as the time of Sydenham. If that of Fernel can be called such, it is one of the oldest. Beauvais, about the commencement of this century, produced one which has decided merit. So has that of Sprengel, although with a mixture of good and bad qualities. The work of Marshall Hall, first published in 1817, that of Professor Schill, and those of Louis, Raele, Laycock,¹ and Barclay, are the most important of the recent efforts to fill this want of medical literature; not forgetting some immortal treatises on special departments of diagnosis, such as those of Auenbrugger and Laennec.

Of course, as diagnosis is built, in part at least, upon pathology—as diseases must be individually known before they can be differentially defined, the place of the former department in the genesis of medical science must be one of sequence rather than of precedence. We are not yet ready for a complete elaboration of semeiology; for this, in its statements, requires a classification, not only of morbid conditions, but of diseases. Now, all conditions of organic and functional, or general and vital disorder, are far from being understood; much less are all the lines of distinction between what are called diseases finally made out; so that the perfection of the science of diagnosis awaits that of nosology.

This dependence is obviously a source of some difficulty and inconvenience to every writer upon diagnosis at the present time. In the "discrimination of diseases," *what* diseases are to be named for discrimination; and how are they to be grouped together? Shall a pathological, a clinical, or a

¹ On Medical Observation and Research.

purely arbitrary classification be adopted? Having no perfect pathological one, for the purposes of diagnosis clinical indications may well be followed, with such arbitrary construction as the present ambiguities of medical knowledge and opinion require. Such has been the plan of the author of the work before us; and we may anticipate a later expression of opinion by stating that it has been very well carried out.

Dr. Da Costa's plan does not differ very widely from Barclay's, although his topics have another order of succession. Each, however, includes a few subjects which the other omits. Dr. Da Costa thus excludes diseases of the ovaries, uterus, bones, joints, and muscles; and gives a chapter upon poisons and parasites. One peculiarity of importance in the arrangement of Dr. Da Costa, is, the association of disorders in groups characterized by prominent symptoms or physical signs. Although in Marshall Hall's work this is done in one or two instances, and occasionally, also, in Barclay's, particularly in describing abdominal affections, yet the idea is by neither of these writers so regularly and usefully carried out as in the book before us. It is a natural, and no doubt frequently serviceable mode of presentation of clinical groupings; while it is often necessarily subordinated to the commonly accepted classifications.

Two stand-points offer themselves primarily to the student of diagnosis; that from which he views the functional and physical changes of the organs as signs of disease, and that which considers diseases as marked and ascertained by characteristic signs. From both he deals with the same objective and subjective signs, but in different aspects, which should become equally familiar to the accomplished diagnostician. Though diseases are not *entities*, yet neither are they merely indefinite and constantly intermingling changes in the conditions of the body; there is an individuality in the morbid movement in very many of them, the recognition of which alone can elevate semeiology to much dignity as a branch of medical science. The study of the signs of disease from the first of the above-named stand-points, and especially of those obvious and general signs which concern the position of the body, the expression of the countenance, the skin, pulse, tongue, and sensations of patients, occupies Dr. Da Costa's first chapter.

While an analysis of the whole of the contents of so large a book would be obviously beyond our limits, it is proposed in this review to notice some minor points, especially where they admit of question; assuring the reader that he will find general soundness, we may say almost undeviating accuracy, to prevail in the work, so as to leave us little to discuss except these lesser matters. A high valuation of its good qualities justifies a desire to point out even what might appear to be almost trifling defects.

Summary and aphorismal statements especially demand carefulness; because a hasty, and above all a young reader, may not always remember to find the correction or qualification of a partial account of a subject in a distant part of the same volume. Thus we must object to the sentence (p. 30), in which it is said that "a dusky flush on the face, particularly if associated with rapid breathing, is almost a certain indication of inflammation of the lung." The omission of the word "particularly" would have made it safe enough, notwithstanding the usual (moderate) acceleration of breathing in typhus and typhoid fevers, in which the face is characteristically flushed.

The general account of the *pulse* given in this chapter is good, though brief; but a verbal mischance may again be glanced at (p. 32), where it is said that "in great debility the pulse rises; and the more depressed the

vital condition, the higher the pulse becomes." If it were stated that the frequency of the pulse "rises," or becomes "higher," with great debility, it would be correct; but it is difficult to dissociate the idea of elevation in the pulse itself from increase of force.

A more positive question may be ventured upon in regard to the account of the "dicrotic" pulse (p. 33). This is called "a form of tense pulse, in which each beat seems double, sometimes met with in fevers, and oftener in hemorrhages from internal organs." Less familiar with it in connection with hemorrhages, we must dissent from its being designated as a *tense* pulse, as it occurs in typhus and typhoid fevers. The reverse of this we believe to be true; that it is best explained by a loss of tone and tension in the arteries, causing the arterial rebound to follow the heart's impulse sluggishly, after a slight but perceptible interval. Neither is it by any means always, as stated, when persistent, a sign of "evil augury."

Cerebral, spinal, and nervous disorders are taken up in the second chapter. A *regional* subdivision is thus entered upon; which is, after all, eminently convenient as far as it goes. In the valuable manual of M. Racine¹ it is the only one pursued systematically. Dr. Da Costa adds, very judiciously, full chapters upon dropsy, diseases of the blood, rheumatism and gout, fevers, &c. Of these hereafter.

Those symptoms and morbid states affecting the brain, cord, and nerves, which have rather a general than a specific significance, are first considered; as, derangement of intellect, of sensation, and of motion. Delirium, stupor, coma, and insomnia, belong to the first of these.

Psychopaths would object to an implication contained in some expressions several times repeated, namely, that mental derangement may occur independently of cerebral structural change (pp. 40, 50, 70). Thus, of illusions, ocular spectra, and phantasms, it is said that "they are more common in derangement of the mind, temporary or permanent, than in actual disease of the brain." In the table of cerebro-nervous disorders (p. 70), insanity is placed among the *functional* affections of the cerebrum. This contradicts the dogma from which scarcely any writer upon the subject now dares dissent, that mania, monomania, melancholia, &c., are all invariably dependent upon some (still undefined) organic change in the brain, without which, under causes of merely functional disturbance, only delirium, toxic coma, or insomnia could be produced.

In the account of acute meningitis (p. 71) we miss the mention of the almost universal slowness of the pulse in the middle stage, following the febrile acceleration of the onset, and preceding the febleness and rapidity described as belonging to the pulse of the stage of exhaustion. As to the diagnosis between meningitis and the head-symptoms of continued fevers (p. 73) a fuller statement would include the fact, that nearly always there is in the former, in the early and middle period, greater relative heat of the head, and more obvious fulness of the temporal bloodvessels and throbbing of the carotids, than in the latter.

Of tubercular meningitis, it is observed that "it is very plain that many of the symptoms are attributable to pressure of the fluid on portions of the brain." A like recognition of the influence of such pressure occurs in the section upon apoplexy; admitting (p. 88) that the latter may occur (although without pathognomonic signs) from serous effusion alone. In this admission, our author differs positively from Dr. Todd, but agrees with

¹ *Traité de Diagnostic Médical; ou Guide Clinique pour l'étude des Signes Caractéristiques des Maladies.* A Paris, 1854.

the large majority of previous writers; and we believe Dr. Da Costa to be right. At the same time, in all cases of meningitis, simple or tubercular, the adhesion of the arachnoid at the base of the brain from exudation of plastic lymph, limiting the vibrations of the sensorial and sensorimotor part of the cerebrum, and impairing also directly or indirectly those of the medulla oblongata, may be supposed to be of importance toward the fatal result.

Cerebro-spinal meningitis is described (p. 78) as "generally not met with save as an epidemic disease, which presents itself at different times in somewhat different forms." In its most common characters it is said to be gradual in its approach, with an average duration of two or three weeks; occasionally the seizure being sudden, and death resulting in a few days. Headache, delirium, irritability of stomach, throwing back of the head and convulsive action of various muscles, and a spotted eruption, sometimes petechial, about the third day, are frequent symptoms. In all of this, except rate of progress and duration, we see a close resemblance to the remarkable epidemic lately observed in the vicinity of this city and elsewhere, to which our author refers in a later part of his book. There is an important difference, however, in the described rate of progress; nor does this agree exactly with the account given by Boudin of a number of European epidemics of cerebro-spinal meningitis, to which reference was made in some remarks published in the last number of this journal.¹ The disease which epidemic cerebro-spinal meningitis is said by our author most closely to simulate, is typhoid fever; this can hardly be said of our present epidemic, whatever be the name by which it is called. To this subject, however, we may return hereafter.

One of the minor omissions to which it is almost hypercritical to refer, but which have their importance to the uninstructed reader at least, is that of the horror and dread so generally (though not invariably) connected with the illusions of the sufferer with delirium tremens. It is mentioned only in the account of the diagnosis of acute mania (p. 85), as "the alarm," but is not suggested in the description of the malady of which it is so characteristic. The *familiarity* of such a symptom may well account for the oversight, but, in a treatise intended to be elementary as well as exhaustive, hardly justifies it.

An important statement is made (pp. 82-3) of the occasional need of diagnosis between simple mania-à-potu and a condition of "extreme cerebral congestion, or inflammatory action, produced by the same exciting cause that has brought on delirium tremens." In this blending of two morbid states, the pulse is tenser, the skin hotter, and the stomach somewhat more irritable than in pure mania-à-potu. Sometimes convulsions, strabismus, and coma set doubt at rest. It might be added that the history of the case commonly aids the distinction, as such a condition usually follows a short but violent debauch, in one not long or constantly innred to great excess. We have known such an attack to occur more than once at considerable intervals in the same individual, and once found great benefit to attend the abstraction of blood by venesection, which, in pure delirium tremens, would be destructive.

After the affections "of which delirium is a prominent symptom," our author considers the diagnosis of those marked by sudden loss of conscious-

¹ Transactions of Philadelphia College of Physicians, Am Journ. of Medical Sciences, July, 1864, p. 93.

ness and of voluntary motion, of which the chief are (leaving epilepsy for the convulsive disorders) apoplexy, sun-stroke, and catalepsy.

A full account is given, we should fear in almost too positive terms, of the indications by which we may determine the *seat* of hemorrhage causing apoplexy. We quote a portion of it only (p. 88).

"In the vast majority of instances, the blood is effused into one of the corpora striata and optic thalami, and we find, in consequence, only one-sided paralysis. If the lesion be in both hemispheres, the palsy is on both sides of the body, although almost invariably more complete on one side than on the other. Yet a double-sided palsy does not justify an absolute opinion that the extravasation of blood into the brain substance is double-sided. It betokens also an effusion into the ventricles. But ventricular hemorrhage is, besides, distinguished by profound coma and by tonic contraction of the muscles.

"Hemorrhage into the corpora quadrigemina presents most frequently this combination of symptoms: muscular tremblings, convulsions, impairment of sight, and alteration of the pupils. Cerebellar hemorrhage gives rise to very temporary loss of consciousness, to relaxation of the muscles of the limbs without paralysis or impaired sensibility, and to frequent vomiting. In hemorrhage into one-half of the pons, there is palsy of the extremities on one side, and of the face on the other."

The distinctions between apoplexy and the affections liable to be confounded with it, are very clearly drawn. We have only to notice, in passing, an apparent forgetfulness, more conspicuous on an earlier page (p. 42), of the importance of the *diverse* action of different narcotics on the pupil, which meets, it is true, full correction elsewhere in the book. One of the least familiar conditions causing apoplectic symptoms is *obstruction of the cerebral arteries*. This is usually an attendant or sequela of endocarditis, with valvular vegetation, causing embolism.

"The usual locality of the impaction is, according to Virchow, in the artery of the fossa of Sylvius; and the consequences of the interrupted circulation are at once perceived in the adjacent centre of motion, the corpus striatum. The palsy that ensues in connection with the apparently apoplectic phenomena is one-sided, and the facial paralysis is on the same side with that of the limbs. Other peculiarities of the hemiplegia are, that its onset is not of necessity attended with loss of consciousness, or that this is slight and of short duration; that the palsy is often quickly followed by gangrene of the extremities, or is associated with disturbance of the kidney, or with enlargement of the spleen and tenderness in the splenic region, produced by an impaction of fibrin. Just as in apoplexy, we may find, in obstructions of the vessels, softening as a result of the accident; nor are the symptoms of this sequel different from what they are when it is owing to more usual causes. Occasionally the clot is not washed into the brain, but is formed in one of its arteries. The thrombosis may extend thence as far as the common carotid. Hasse, who has placed two such cases on record, mentions that, independently of the cerebral symptoms, they may be recognized by the absence of pulsation in the carotid of the affected side, and its tense, corded feel." (pp. 91-2.)

Our author's account of *sun-stroke* lacks, to be complete, the recognition of the fact that exposure to the direct rays of the sun is not necessary to produce dangerous or even fatal exhaustion from heat. The condition resulting in such a case is correctly described by him as belonging to those instances in which "the abnormal manifestations come on gradually, the patient at no time becoming insensible," except that *headache* is sometimes entirely absent, the brain having no more to do with the attack than any other organ. Here the patient appears to suffer from a *blood-change*, under the influence of high temperature.

In *epilepsy*, a sign is given which, so far as the detection of feigned

attacks requires, is pathognomonic, viz., the insensibility of the pupil. Dr. Da Costa does not mention, however, that *dilatation* of the pupil is also a common symptom of chorea, its normal action in response to light being an indication of convalescence.

An excellent table compares the characters of epilepsy with those of hysterical paroxysms. Such tables have great convenience to the student both for study and reference. Several of them occur in different parts of the volume before us; but a yet larger series, even on the elaborate plan of those of Marshall Hall's work, would be still better. This may seem to be a very mechanical sort of labour for a scientific treatise; but, in our *telegraphic* age, condensation for speedy use is a current demand in all departments.

Exhaustion of brain-power, such as occurs among professional or literary men, or in any whose mental faculties are overstrained, is well described, as an affection which may be confounded with softening of the brain.

"This sometimes comes on very suddenly, with signs like those of a collapse; at other times it is slower in its development. Its manifestations are, a slight impairment of memory, and an inability to read or write, save for a short period, although the power of thought and of judgment is in no way perverted. Nor is the power of attention more than enfeebled; the sick man is fully capable of giving heed to any subject, but he soon tires of it, and is obliged from very fatigue to desist. He passes sleepless nights, is subject to ringing in the ears, cannot bear much exercise, is troubled with irregular action of the heart, and with a frequent desire to urinate; but he does not lose flesh, and his digestion is unimpaired." (p. 111.)

The phenomena of such a case differ from those of cerebral softening, by the absence of headache, or its far less marked and permanent character, by the unimpaired intelligence, and by the non-occurrence of spasms, or of paralysis of motion or sensation. Dr. Da Costa does not attempt to define the condition of the brain belonging to cerebral exhaustion, beyond a probable impairment of nutrition. Opportunity to watch closely a case of the kind has strongly impressed us with the importance of *dilatation* and *loss of tone* in the *cerebral blood-vessels* in its pathology.

Researches by various authors, especially Romberg, Skae, Aran, and Duchenne, have been freely consulted by our author, upon the obscure subject of the different forms of general paralysis. Three disorders are separated by these writers, which certainly a superficial examination would be likely to confound as one. These are, "general paralysis," so called, the "*ataxie locomotrice progressive*" of Duchenne, and the "*progressive muscular atrophy*" of Aran and others. We have not space to cite the distinctions laid down between them. Many readers will, however, incline to favour the belief that they may all be, *pathogenetically*, grades or varieties of the same essential affection, since it is difficult to suppose even a progressive muscular atrophy to be altogether independent of a morbid state of the nerve-centres, inducing the impairment of action and nutrition in the muscles.

In this cursory notice of Dr. Da Costa's chapter upon affections of the brain, spinal cord, and nerves, we have not named, even, all of the headings under which those affections are grouped by him, much less the disorders themselves which are considered. No omission of importance is observable in this chapter, unless it be the non-consideration of *spinal irritation*, which is named in a table (p. 70) with other functional disorders of the spinal cord, but is not afterwards mentioned. It may be pre-

sumed that this omission is intentional. Dr. Barclay, in his work on *Medical Diagnosis*, alludes to spinal irritation only to object to the term as erroneous, and to resolve all the cases so classified into hysteria and neuralgia. Dr. Inman, of Liverpool, has made a more elaborate attempt to upset the popular and professional theory of spinal irritation, arguing most plausibly to show that the symptoms are not even neuralgic, but *muscular*, deserving the name, which he has given them, of *myalgia*. Now, although Barclay is probably right in eliminating many supposed pains in the back and other symptoms as purely imaginary, and Inman may be correct in referring others to the muscles (a recognition of some importance, no doubt, and the term *myalgia* ought therefore to be retained), yet there is a class of cases which every practitioner sees, which, clinically speaking, requires a place by itself. If the term spinal irritation be undesirable, let it be dropped or changed; but it is no worse than many others long kept by the common consent of the profession.

Diseases of the upper air-passages are next taken up in the book before us, in Chapter III. This chapter is sufficiently full, although brief, and is written with great correctness as well as clearness. In the next, occupying 187 pages, we have discussed the diagnosis of diseases of the chest, including those of the lungs, heart, and thoracic aorta. The subject of physical diagnosis and its methods is first expounded systematically, and with as great simplicity as the topic admits. The student is fatigued with no unnecessary complications or parade of difficulties; the reason is appealed to as well as the memory and the sense, and the necessity of thought in making use of physical, as in all other modes of diagnosis, is insisted upon. We have only to wish, here and there, for a fuller consideration of the *rationale* of physical signs, the explanation of which, when attainable, must aid the mind in interpreting their meaning in doubtful cases. The wood-cuts illustrating the exploration of the lungs diagrammatically, do not appear to us to add much to the lucidity of the text. Those of the heart are of more service, decidedly.

Dr. Da Costa does not value highly *minute* measurements of the chest for the purposes of the physician. Nor does he consider the spirometer of much practical use in diagnosis. In both of these judgments he is no doubt right. The graduated tape will answer for the one purpose, and inspection and palpation of the chest-movements will suffice for the other. For percussion a pleximeter, other than the finger, is of advantage only in examining the abdomen.

It is stated (p. 150) that dulness of resonance on percussion is always associated with an increase of resistance to the finger. Though true, some qualification of degree might be mentioned. The increase of resistance is not always *in proportion* to the dulness; and sometimes, with delicacy of touch, aid in diagnosis may thus be obtained. Between perityphlitis involving the areolar tissue around the cæcum, and distension of the gut by impacted feces, for example, some difference may be discerned in the resistance, as marked at least as any in the degree of dulness, by which the *depth* of the tumescence may be inferred. A peculiarity in the impression upon the finger is observed, also, in hydatids of the liver, and occasionally in ascites. Pierry considers difference in resistance to be almost as important as difference in resonance; but, certainly, its appreciation requires more delicate perception.

Quality or character of percussion-sound is divided by our author as it is *clear, dull, or tympanitic*; the metallic and cracked-metal sounds also

being superadded. Variations of all of these in *degree* or intensity are recognized, as well as in *pitch*. This classification includes all that is important, in the simplest manner, and appears to us preferable to that of Skoda, who names differences of degree of resonance as *full* and *empty* sounds. The terms proposed by Piorry, thigh-sound, liver-sound, stomach-sound, &c., are very wisely ignored, being too ambiguous for utility.

In auscultation, Dr. Da Costa has investigated the comparative intensity of the vesicular murmur on the two sides of the chest; with the result of confirming the assertion of Dr. Flint, in opposition to that of most other authors, that a stronger, more vesicular inspiration belongs to the left lung; while more expiration, more of the bronchial element, is presented by the upper portion of the right.

Changes in the vesicular murmur are designated as alterations in intensity, viz., puerile, feeble, and absent respiration; alterations in rhythm; and alterations in character, *e. g.*, rude respiration. The rhythmic irregularity called *jerked inspiration* is thought to be present under too many different circumstances to have by itself much diagnostic significance. When limited to the apex it may excite or corroborate a suspicion of tubercle.

Cavernous respiration is admitted by our author among the cognizable auscultatory sounds. Laennec may have defined it ambiguously; but Skoda's objections cannot properly go farther than to limit the application of the term. There certainly are blowing sounds which are not purely bronchial, however they may be influenced by the connection of cavities with the bronchial tubes. Dr. Da Costa describes cavernous respiration as "less diffused, much more hollow, and, above all, of a much lower pitch than ordinary bronchial respiration." But the lowness of pitch does not appear to us necessarily constant. It is rather a *difference* of pitch and character, *usually* lower, which enables the ear to determine the cavernous origin of the sound. A cavity of a certain size and shape, with firm walls, or having a narrow and tense opening, may, as Skoda remarks, give rise to an almost hissing or whistling sound, distinguishable from the sibilant rale chiefly by its localization and persistence.

The crepitant rale of pneumonia is explained in our book by "the agitation of fluid in the air cells, or in the finest extremities of the bronchial tubes." More satisfactory to us is the view which accounts for it by the forcing open, during inspiration, of the air-cells, agglutinated together by the lymph of exudation. Between this and "crackling" a difference exists, not only in the number and fineness of the vibrations, but also in their uniformity or equability. Our author declares that—

"As the result of investigations undertaken to ascertain whether there is any positive difference, as far as the ear can detect, between some of the finer kinds of friction-sound and fine moist rales, I have come to the conclusion that there is frequently little or none; and still less is there between crackling and the crackling variety of friction-sound, or between this and the vesicular rale." (p. 167.)

Auscultation of the voice is considered by Dr. Da Costa as affording information of very small value. It will be impossible for us, however, to linger over this part of his volume. Two good practical hints may be quoted as to the examination of the chest in children; namely, always to auscultate the child's chest before perussing, as the latter gives most alarm, and to place the ear first, for the same reason, to the posterior part of the chest.

Among the special diseases of the chest whose diagnosis is treated of,

hooping-cough is spoken of as *epidemic*, with no word of its contagious character. Certainly the evidence of the latter is as great as it can be in any disease not capable of inoculation.

A somewhat rare affection is described under the name of *plastic bronchitis*. It may be acute or chronic; the only diagnostic sign is the expectoration of a membranous material, in thin shreds or moulded into an accurate cast of a bronchial tube and its ramifications. The little round solid pellets which phthisical patients, or even some persons in perfect health, cough up from time to time are said to be the result of a plastic bronchitis on a very limited scale.

Collapse of the lung is carefully discussed, following the researches of Legendre, Fuchs, Gairdner, and Rees. Lobular collapse has undoubtedly often been mistaken for lobular pneumonia. When dependent upon obstruction of the bronchial tubes by inspissated mucus, the removal of this may cause a sudden disappearance of the morbid state with all its signs. It is not always, however, so dependent. Any want of power to fill the lung-cells with air may induce it. The sign first mentioned by Dr. George A. Rees has been repeatedly confirmed under our observation; it is the moving inward and receding of the ribs during inspiration instead of their expansion.

The diagnosis of phthisis is held by our author to receive but little aid from the microscope. The fragments of pulmonary fibrous tissue in the sputa show the partial disintegration of the lung, but they do not necessarily prove this to be of tubercular origin. And "tubercle-corpuscles" cannot easily be distinguished from shrivelled pus-cells. Nor can a "pre-tubercular stage," though it not improbably exists, be ascertained with positiveness by physical exploration.

"It does not seem to me that the advocates of the possibility of detecting phthisis at this stage have clearly proven their point. On the one hand they lay claim to signs, such as diminished expansion of the chest, decreased vital capacity, a murmur, feeble and remaining feeble on forced breathing, haemoptysis, even slight dulness on percussion—a combination which we are in the habit of regarding as evidence that tubercle already exists. On the other hand they assert that defects of temperature, lessened muscular power, improper assimilation, emaciation, sore throat, and slight, dry cough, are prodromic symptoms. Yet all of these may be associated with a temporary derangement of health, and all of these are infinitely more frequently so associated than with threatening consumption. And to say that they become of value only when coexisting with the physical signs alluded to is but saying that they are the clinical phenomena which, thus grouped, we are in the habit of accepting as proof of the first stage of the disease." (p. 202.)

Among the affections with which phthisis, without due care, may be confounded, *chronic pneumonia* and *chronic pleurisy* are mentioned. We object to both of these names. If chronic pneumonic consolidation be "commonly called chronic pneumonia," it is still more common to understand by pneumonia an inflammation of the lung; and this is certainly not present (but only antecedent) in many, if in any, of the cases of chronic consolidation. True chronic pneumonitis is a rare disorder. So, too, with "chronic pleurisy." The effusion is the consequence of the inflammation, not the sign of its presence. We maintain that the author of a book intended to be a standard manual of diagnosis should influence the nomenclature of the science so far at least as to avoid incongruous terms which are not made absolutely necessary by constant usage.

In the account of pulmonary *abscess* as distinguished from phthisis by

its signs, our author has perhaps given too little prominence to the suddenness of the commencement of the expectoration in the former, which can, almost always, be traced in its history. He admits a question whether there be not a form of *scrofulous* phthisis which is not tubercular, occurring especially among children of the poorer classes. A case is given in illustration; the child dying of an injury while improving under anti-strumous remedies, autopsy showed in the greater part of the left lung and a portion of the right, yellowish cheesy deposits, which exhibited under the microscope a large quantity of granules and some shrivelled cells, without distinct nuclei. The prognosis of the scrofulous cases may be believed to be much more favourable than that of the purely tubercular.

Although the general disposition of pathologists of late has been to recognize no essential distinction between serofula and tubercle, yet it may be allowable at least to suppose them to be *varieties* or modifications of the same diathesis, the impairment of tissue-formations in the one resulting in more easily resolvable deposits than in the other.

Under the head of "Acute Affections of the Lungs accompanied by Dulness on Percussion," we have mentioned three of great interest, viz., acute phthisis, acute pneumonia, and acute pleurisy. Their alliance is close, notwithstanding the important difference of the presence of tubercle in the disease first named. This is well called by Dr. Condie "tubercular pneumonia." Contrary to the opinion of Lebert, this disorder is asserted by our author to be invariably fatal.

These three acute maladies are exceedingly well discussed. A few minor points only require remark in passing. Reason does not appear to us for substituting, as a name for the rare of pneumonia, "vesicular" for "crepitant" rare. The latter name is descriptive as well as familiar, and, although it is a vesicular rare, so also is, and is named (p. 223) that of pulmonary oedema. The crepitation occurring often at the back of the lungs in *low fevers* is said by our author to be "probably the result of pulmonary congestion," and to be not "dependent on inflammation of the pulmonary tissue." This statement must be received with hesitation. Real hypostatic pneumonia is proved by autopsy to occur, not very rarely, in the posterior part of the lungs in fever patients lying long on the back. But this does not at all necessitate the error in *practice* which is deprecated by Dr. Da Costa. It should not happen that "the patient's life is brought in jeopardy by withdrawing his stimulants and treating him actively" (p. 224), if the therapeutic principle be held in view that a decidedly *asthenic* pneumonia will bear stimulation, and does not require reducing treatment of any kind.

As "typhoid pneumonia" several different affections have been described. Dr. Da Costa's definition is, that

"Typhoid pneumonia is pneumonia with symptoms of a typhoid type, and marked by rapid failing of the vital powers. The inflammation of the lung arising in the course of typhus or typhoid fever will of course be apt to present this character; but the malady is also noticed as a consequence of phthisis; as supervening in cases of erysipelas, of Bright's disease, and of delirium tremens; or as the sole apparent affection. It happens not unfrequently in epidemics, and is very often observed among negroes. It is often also very fatal among troops in the field, serving in unhealthy localities, and placed under unfavourable hygienic conditions. In many parts of the country, in which typhoid pneumonia is very prevalent, it bears the distinct impress of malaria. Again, articular symptoms seem to predominate in some regions of country, and in some epidemics." (pp. 226-7.)

"Bilious pneumonia" is also a name variously and vaguely applied. The simplest case which suggests it is not rare, that in which pleuro-pneumonia of the right side extends to and involves the liver; or in which, at least, hepatic derangement coexists with inflammation of the lung. But in warm and malarial countries, in the winter and spring especially, "pneumonia wearing the livery of malaria" appears to take the place, in some degree, of the fevers of the autumn; and is hence sometimes called the "winter fever."

Among affections which may be confounded with pleurisy, *pleurodynia* and *intercostal neuralgia* are mentioned by our author, with an effort at distinction between them which common usage hardly will sustain. Muscular rheumatism of the chest might at least be more easily and clearly set apart from plenodynia than the latter (as the termination indicates, eustomarily, pain without inflammation) from any neuralgic affection of the side. It would be better, in a work on diagnosis, rather to simplify and diminish than to multiply names and distinctions. We have already alluded to Inman's name of *myalgia* as one which has a meaning capable sometimes of useful employment.

Closing his history of the diagnosis of acute phthisis, pneumonia, and pleurisy, Dr Da Costa makes some observations upon their treatment. It may be as well here as elsewhere to remark that such considerations do not appear to us to belong at all in a treatise upon diagnosis. Without swelling the volume to vast proportions, it would be impossible to give a complete statement of the treatment of all the maladies diagnosticated; and, if not complete, nor even summarily stated for all, it would be better for it to be entered upon with none. In the whole work we find but half a dozen pages devoted to the treatment of perhaps twice as many diseases; and these few paragraphs are so curt as to be unsatisfactory. Surely no student could depend for his therapeutical knowledge upon such brief statements; while the practitioner who refers to the book for important knowledge upon diagnosis, would be as little served by them. Sometimes the effects of treatment give indications for the comparison of disorders; and then, only, do they need to be adverted to in such a work.

The remarks before us on the treatment of acute affections of the chest illustrate this view. Of acute phthisis, pneumonia, and pleurisy, it is said that—

"They agree in not demanding what is commonly called an active antiphlogistic treatment. In other words, although in individual cases such a plan of treatment may be urgently called for, it is not generally essential—nay, it is often hurtful to the well-being of the patient. By adopting this view, we avoid treating each case of inflammation of the lung or of the pleura alike, because it is an inflammation; we avoid prostrating the strength; we are not in a hurry to overthrow what we may not be able to build up again; we are not fettered to a doctrine which prevents us from using any remedies which the particular circumstances attending the case may necessitate." (p. 236.)

Why open such vexed questions in a work of this kind? We propose no criticism at present of the principles of therapeutics involved. Our author does not, however, appear to be entirely committed either to the expectant or the stimulant school of therapeutics; since he advises, for acute pericarditis (p. 292), leeching, mercurials, colchicum, and alkalies, amongst other remedies; and for perityphlitis (p. 417), leeching, mercurial inunctions, &c. He remarks, even (p. 623), that when a patient, in whom cerebral symptoms in remittent are mistaken for meningitis, is bled and freely purged, the treatment "fortunately is of advantage to him." It is not, then, on

account of the nature of his opinions upon practice, so far as they are shown, that we object to their introduction, but because of the inappropriateness of their statement to the treatise itself. By their omission, space would have been left, without enlarging the volume, for some other matter; for instance, the further explanation of the causes or reasons for certain signs in physical exploration. An example of the need of this falls under our view as we glance over the pages upon *pneumothorax*: where allusion is made to the difficulty in diagnosis presented by certain cases of pneumonia, "in which, by way of exception, the percussion-sound over the consolidated lung is tympanitic or amphoric" (p. 240). Yet the learner obtains no information as to how such an exception is produced or can be accounted for.

Dr. Da Costa's section upon the diagnosis of diseases of the heart is particularly well written; and the diagrams are good and useful. In his exposition of the medical anatomy of the cardiac region, he gives, as the result of his own measurements, two inches and a half as the transverse diameter of the space over which dulness exists in persons of medium size; and upwards of three inches in tall, broad-chested men. Dr. Bennett considers an excess over two inches to show abnormal enlargement.

Endocardial murmurs are considered all to have essentially the same meaning; there being no practical significance in the various comparisons and terms which ingenuity suggests for them.

A very good account is given (pp. 278-9) of the envious affection of the heart now so common among soldiers, which has elsewhere been designated as "cardiac exhaustion."¹ Pain, however, has been less constant in many cases which we have seen than in those described by Dr. Da Costa. The latter prefers to name the disorder "irritable heart."

His history of acute endocarditis and pericarditis appears to us to give almost too little prominence to the frequency of gastric irritation among the indirect symptoms. This is described (p. 293), but rather as an exceptional occurrence. The question whether "endocarditis can occur without a blowing sound," he answers in the affirmative. The clinical study of this inflammation is, indeed, a recent study. Least of all do we yet understand, perhaps, the evidence of the formation of clots in the heart, and of the conveyance of their fragments into the circulation; although Virchow, Kirkes, Paget, and others, have done much to clear this up. Some recent writers deny that life is ever shortened an hour by clot formation in the cardiac cavities. When at all extensive, this announces itself, says Dr. Da Costa, "by a sudden augmentation of the symptoms of obstructed circulation: the heart's action becomes exceedingly irregular; the skin cold; the dyspnoea increases, and so does the extent of the praecordial dulness" (p. 286). Raele² does not admit that the praecordial dulness is at all extended; but adds, as signs, the muffled and indistinct character of the heart-sounds, and failure of pulsation in arteries remote from the heart. Dr. Da Costa considers that coagulation may occur in the cardiac cavities independently of inflammation; the symptoms then being the same, and death following the impediment always within a few days.

Of fatty degeneration of the heart, there does not seem to be any pathognomonic sign or symptom. Feebleness and irregularity of the heart's action, with sighing respiration, and attacks of syncopal apoplexy or apoplectiform syncope, are among the most marked and usual of its phenomena. We

¹ Transactions of Philadelphia College of Physicians, American Journal of Medical Sciences, July, 1864, p. 89.

² Traité de Diagnostic Medical, p. 352.

should have been glad to see a full citation by our author of the graphic account by Dr. Stokes of the attacks of apoplectic syncope, and of its diagnosis from true apoplexy. The non-sequence of paralysis, as mentioned by Dr. Da Costa, is, it is true, the most decisive point of difference.

The last of several affections named as capable of being mistaken for dilatation, is "accumulation of blood in the cavities of the heart" (p. 304), or "cardiac engorgement." There is certainly obscurity in the terms here employed, as well as in the diagnosis itself. As, "like dilatation, this increases the area of percussion dulness," must there not be a temporary dilatation present? We confess, however, to no acquaintance with the affection thus described.

An excellent table is given (pp. 312-13) of valvular diseases and their signs. Our author adopts the clearly rational view, that it is not, at last, of great practical consequence to determine exactly *what* lesion of the valves exists; the important question is, whether disease of the valves of the heart is or is not present. The condition, power, and action of the cardiac muscle is that upon which long or short life, recovery or death, must chiefly turn; and the valvular state is important as it affects these. The brief remarks on the treatment of valvular affections (p. 314) include a prohibition of digitalis except during periods of cardiac excitement. This long held opinion seems now to be threatened with unsettlement by some clinical observations, recently made, suggesting the hypothesis that digitalis may be a *tonic* to the heart. Dr. Da Costa denies that valvular lesions ever occur without some abnormal character in the heart-sounds. Blowing sound may be absent, as in two interesting cases which he narrates; but in these a clacking sound takes its place. On the other hand, several observers have noticed, in certain cases, all the evidences of incompetency of the valves during life, when no structural change in them was found after death. Dr. Bristowe has explained some of these cases by supposing dilatation of a ventricle without corresponding elongation of the musculi papillares and chordæ tendineæ. This applies, of course, only to auriculo-ventricular regurgitation; but it is to this condition that the recorded instances refer.

The section on thoracic aneurism does not need to detain our attention. Of aneurism of the descending aorta, one consequence may be mentioned here, in addition to those enumerated by our author, namely, emaciation from pressure of the tumour upon, and obstruction of, the thoracic duct. This was observed, some years ago, in a case in the Pennsylvania Hospital, in which the diagnosis was made by Dr. W. Pepper, and confirmed in autopsy.

Chapter V. is upon diseases of the mouth, pharynx, and œsophagus. A mere glance at these must suffice us, as much of the volume yet remains for notice. Dr. Da Costa does not insist on a diagnosis between aphthæ of the mouth and thrush; nor does he even mention the generally supposed parasitic nature of the formation present in the latter. Between diphtheria and other forms of throat affection the distinctions are very clearly drawn. Especially apt are superficial observers to mistake for diphtheritic exudation those little yellowish or whitish points which form in tonsillitis, at the opening of the follicles on the surface of the swollen tonsils. But these, as our author says, are very limited, are strictly confined to the gland, are roundish or oval, and leave superficial ulceration behind them. Microscopically, they consist largely of epithelium, while the diphtheritic membrane is described as being composed mainly of fibrillated fibrin, of

granular corpuscles, and pus. Yet, it must be observed, epithelial cells are not scantily found, especially in simple or non-malignant diphtheria ; and the little points of tonsillitis sometimes form pus before they disappear.

Some obscurity in the diagnosis of diphtheria is connected with its separation from erysipelas of the fauces, as described by Dr. Todd. The latter seems to present an earlier difficulty of deglutition, without tumefaction of the throat or glands of the neck, and without formation of a membrane. No difficulty is admitted by Dr. Da Costa to exist in regard to the non-identity of diphtheria with searlatina, however closely allied they may be in their physiognomy.

A full, elaborate chapter is next devoted to the consideration of the diseases of the abdomen. The symptoms and diseases which affect the apparatus of digestion are extremely well delineated, but a more decided recognition would have been useful of *atonic dyspepsia* as a complaint. This, as Barelay and others familiarly explain, is separable from acute and chronic gastro-enteritis, and from all decided organic lesions of the stomach ; having three morbid elements in varied proportion, namely, defective or perverted innervation (irritability), muscular debility and distension, and deficient or unhealthy secretion. Nowhere is this frequent and troublesome malady more graphically treated of, in all its aspects, than in the published lectures of the late Professor Chapman. Clinically, we do not see how the diagnostician can ignore it, whatever difficulty the pathologist may have in giving it a place. Moreover, it is practically important to distinguish between indigestion with inflammation of the stomach and indigestion from atony merely, the treatment and regimen suitable to the two conditions being nearly opposite.

Acute gastritis is considered by all authors to be very rare as an idiopathic affection. Dr. Da Costa describes cases which differed in nothing from the typical ones of Andral, save in the fatal termination and the immediately preceding symptoms. We have met with one such ; but no doubt the very large majority of instances of gastric inflammation not produced by poisoning or some other direct irritation, belong to the class designated by Dr. Chambers as "gastro-hepatic catarrh." The "acute gastric softening" of Jaeger, Cruveilhier, and Billard, oecurring in young children, cannot be common in this country. Cruveilhier has seen it occur in epidemics. The symptoms are those of a violent and rapidly disorganizing gastritis. It may involve the intestines also.

Ulcer, cancer, and other organic affections of the stomach are fully treated of in the chapter before us. Intestinal disorders follow ; colic in its various forms, and the diseased conditions with which it may be confounded ; then enteritis and peritonitis. We can find space only for a few remarks upon the peritonitis of childbed fever. (p. 405.)

"What the poison is that determines the terrible disease, we cannot here inquire. It may be, as some think, atmospheric : it may be, as others hold, the absorption of putrid matter from the uterus : it may be an animal virus transmitted by the hand of the attendant : the complaint may be, as is now so generally believed, closely analogous to erysipelatous inflammation : it may be eminently contagious ; it may not be so at all. These are not points, however important their solution to the well-being of thousands of lying-in women, which concern us here. For diagnostic purposes, it is of more consequence to know that the distemper prevails epidemically and endemicly, that its features shift, and that the puerperal peritonitis of one year is not the puerperal peritonitis of another ; in short, that while childbed fever, whatever its cause, occasions peritonitis, peritonitis does not constitute childbed fever." "Under the general name of puerperal peritonitis are grouped together several forms of peritoneal

inflammation, having not one, but several causes, accompanying not the same but diverse constitutional states, and presenting not always identical but at times most opposite indications for treatment."

Affections of the cæcum and its appendix, and disorders of which constipation is a prominent symptom, including all forms of intestinal obstruction, are ably discussed by our author. So are disorders in which morbid discharges from the bowels occur, namely, the various kinds of diarrhoea, dysentery, and intestinal hemorrhage. Diseases attended with vomiting and purging come next, cholera infantum, cholera morbus, and cholera. Upon the topic of the latter, we observe that (p. 386) the stools of cholera are said to have an extremely offensive odour. That has not been our experience, nor is it the usual statement. As to the remarks upon the treatment of cholera, besides the general objection we have ventured to make to their introduction at all, they appear to us not satisfactory. All that is said of narcotics and antispasmodics is (p. 450), that in cholera "we know rather what does no good than what is of use; large doses of opium and of stimulants are certainly hurtful." Now, if we have any conviction which appears to be well grounded, it is that opium, not in large doses, perhaps, but in moderate ones very frequently repeated, is of more value in cholera than all other internal medication. Nor does the evidence in favour of calomel in this disorder appear to us to be worth anything whatever, when the aggregate reports of many observers are considered. Having no wish to discuss the point, we refer, for this view, to the reports of Drs. Baly and Gull to the Royal College of Physicians, published about ten years ago.

Diseases of the liver are thoroughly analyzed, as to their diagnosis, in our book, chiefly following Frerichs. Those which most readers will find least familiar are *pigment liver* and *acute yellow atrophy*. The first is associated with severe malarial disease; "the liver presents a steel-gray, or blackish, or not unfrequently a chocolate colour; brown insulated figures are observed upon a dark ground. This change of colour is produced by pigment matter, which is accumulated in the vascular apparatus of the gland," (p. 460.) Acute yellow atrophy is a dangerous affection, consisting in a rapid diminution in size of the liver, with changes in its secreting cells, amounting often to their complete disintegration. To this belong most of those cases of malignant jaundice which terminate rapidly in death after violent cerebral symptoms. The malady scarcely ever lasts a week; generally a few days only elapse before the patient becomes comatose and dies (p. 465). It differs from acute hepatitis by the marked jaundice, the cerebral symptoms, the rapid diminution in the volume of the liver, frequent pulse, and occurrence of hemorrhage. It follows, sometimes, upon violent mental emotions or excesses, and it may occur during pregnancy, accompanied by renal degeneration. Jaundice of a simple and harmless character may also happen in pregnancy, from pressure of the gravid womb. The diagnosis is made chiefly by the difference of severity of all the symptoms, and especially those affecting the brain and nervous system.

Much information, to which we cannot further advert, is given upon all the chronic affections of the liver, with a minute account of the frequently difficult diagnosis between fatty liver, waxy liver, cancerous and syphilitic liver. The last is characterized chiefly by an uneven surface, caused by scattered nodules and cicatrices, coexisting with ulcers or cicatrices from secondary disease in the throat. In cancer, the organ is more enlarged, and the nodules are larger; jaundice is also more generally absent. Cirrhosis is understood by our author to depend upon "a new formation of

areolar tissue, due to inflammation of the fibrous texture, called Glisson's capsule" (p. 484), the bands that result from the thickening of the areolar structure compressing the parenchyma and destroying some of its secreting cells. The original cause is usually a chronic congestion consequent upon the abuse of spirituous liquors.

Abdominal enlargement and its various causes and their differentiation are dealt with in the same chapter, which closes with an account of aortic aneurism and the abnormal pulsations which may simulate it.

The urine and diseases of the urinary organs then occupy seventy pages. This chapter is well and carefully prepared, embracing a digest of the investigations of leading authorities, especially Lehmann, Vogel, Beale, and Thndichum. Nothing of importance is to be missed in it. There might have been advantage, however, in two or three places, in the detailed statement of some chemical procedures of which only a general account is given. The book would have thus been still more complete and useful to beginners in urological inquiry. This remark may apply to Liebig's and Bunsen's methods for the determination of the quantity of urea in the urine, Liebig's volumetric process for the estimation of the amount of chloride of sodium, and his method of separation of creatine and creatinine. For all of these the student is directed to refer for particulars to special manuals. The space which they would occupy, however, if only in footnotes, would not have been wasted. Nor would it have been otherwise than appropriate to insert a few woodcuts, original or selected, in addition to some very good ones given, upon this subject, for which the reader is referred to Robin and Verdeil. The "rapid and absolute diagnosis of pus corpuscles by means of the microscope" (p. 535) might certainly be facilitated in a first examination by some further account or illustration of their peculiarities.

In a table, from Thndichum, of the ingredients present in normal urine, we find among those not stated in earlier analyses sarkine, trimethylamine, phenylie acid, and damaluric acid. The amount of urea passed in twenty-four hours is there given as from 463 to 617 grains; of solids altogether 850 to 1020 grains.

In reading the common statement (p. 513) that the early loss of its acidity by the urine is a significant fact, meaning nearly the same as if it had been discharged alkaline or neutral, we are reminded of an interesting observation of Inman's: that, in low states of disease, the vital depression is manifested by the secretions resisting decomposition for a shorter time than usual. In a moribund condition, he asserts that the urine shows signs of decomposition almost immediately after being voided. An excellent table affords, in the work before us, a summary view of the principal reactions useful in examination of the urine.

Of affections of the urinary organs the fullest consideration is given to Bright's disease. This is regarded by the author as one affection, acute or chronic. Citation is made also of the classification of the English physicians, on anatomical grounds, which divides chronic renal disease into 1, fatty kidney; 2, waxy kidney; 3, chronically inflamed "large white kidney," the chronic non-desquamative nephritis of Johnson; 4, contracted kidney, or the last stage of Bright's disease, or, according to Todd, of gouty degeneration.

Diseases of the blood, in Dr. Da Costa's estimation, are *anæmia*, *leuco-*

¹ Foundations for a New Theory and Practice of Medicine.

cythaëmia, pyæmia, septæmia, and scurvy. We have not room to discuss the questions that might be broached concerning pyæmia and septæmia, the diagnosis of which cannot be separated from their pathology. The formation of secondary purulent deposits seems to be an essential element of our author's pyæmia. The explanation of these is generally supposed to be, that they may be owing to suppurative capillary phlebitis, or to the disintegration in the vessels or heart of clots of vitiated blood, fragments of which are washed into the small vessels or capillaries of individual tissues, where they give rise to inflammation and the development of pus. Pyæmia may then, as it is remarked, "be viewed as a form of septæmia," while in other septæmic states secondary pus formations are not perceived.

Rheumatism and gout have a short but good chapter, Chap. X. The author follows Dr. Adams (as does Dr. Barclay) in describing *rheumatic gout* as an affection in which considerable articular swelling always occurs, of tedious persistence. We find in several recent writers, however, as well as in actual practice, good reason to recognize other forms, and various degrees, of the blending or *hybridizing* of the two "poisons," if such they be, of gout and rheumatism. We see frequent examples, for instance, of articular rheumatism of the larger joints in subjects inheriting some gouty tendency, which respond to colchicum and alkalies in a manner not admitted of rheumatic gout in the pages before us. Hardly enough distinctness, moreover, appears to us to be awarded (p. 589) to the diagnosis of syphilitic rheumatism. We can seldom, if ever, be mistaken in ascribing such a character to pains in the long and flat bones, with *several* periosteal nodes, in which relief is speedily obtained by the use of iodide of postassium.

The highly important subject of fevers occupies the eleventh chapter. We must be content with one or two brief remarks only upon it. Dr. Da Costa does not decide *pathologically* upon the non-identity of typhus and typhoid fever, although, as he says, "we cannot but recognize many phenomena so different that, on clinical grounds alone, if on no others, a separate recognition is called for" (pp. 607-613). We would urge that, if *clinically* different, they should be held to be nosologically so; most of all while the pathology of both, and the etiology of one, at least, of the two diseases are so obscure as they are.

Pain is spoken of (p. 600) as "an abdominal symptom of great significance" in typhoid fever. Our observation would lead us to agree with Raele,¹ who follows Broussais and Bonillaud in denying that pain is a symptom of typhoid fever as such; "its absence being the rule, and its presence the sign of a complication;" although colicky pains are not rare during convalescence. An almost dogmatic assertion attracts attention (p. 606); that the signs of peritonitis in this fever enable us confidently to announce the fact of perforation. On a previous page (p. 404), in a note, allusion was made to some cases of "rapid peritonitis without perforation," described by Thirial, without the nature of the cases otherwise being mentioned; but Prof. Wood has shown² reason to believe that occasional facts may throw some doubt upon, if not oblige us to "abandon," this diagnostic rule.

The "so-called spotted fever" of the present time, in Pennsylvania, New York, and New England, is described in natural connection with typhus fever. In the same *family* with that disease is, undoubtably, its proper place; its best name might, perhaps, be "cerebro-spinal typhus." We

¹ *Traité de Diagnostic Médical*, p. 535.

² *Transac. of Philada. College of Physicians*, 1859.

must object to its being called "cerebro-spinal meningitis" for the same reason that our author does to catarrhal fever or influenza being called a variety of bronchitis. To quote his language on the latter point, "with as much reason might typhoid fever be omitted from the list of febrile maladies, and described as a variety of enteritis or diarrhoea."

Among periodical fevers, the term "congestive" is preserved by our author, we think to a disadvantage. That of "pernicious," now much in use, is liable to less objection. In the diagnosis between yellow fever and remittent fever, more might have been said of the early and great tenderness of the epigastrum in yellow fever. Nor is what we believe to be the general fact stated, that while in yellow fever the discoloration of the skin is nearly constant in those who survive the second or third day, and is decidedly marked, in remittent fever it is very far from constant, is less decided in character, and occurs at a variable time. *Dengue*, or "break-bone fever," is removed by the author from its often supposed affinity to the malarial disorders, and is located as "an affection with features corresponding to scarlatina." (p. 642.) It is declared to be "epidemic and contagious." On all of these points, except its epidemic or endemic character, some doubt may be entertained.

No decision of the question of the identity or non-identity of varicella with variola is ventured upon in our book; but they are shown to differ "clinically" to a sufficient degree. Again we say, if clinically unlike, then they are, or should be, nosologically separate. Moreover, in the morbid anatomy of the vesicle of varicella, and the pustule of variola, there is a distinctive difference. The former scarcely involves the true skin, in an inflammation attended by the effusion of lymph, which forms pus in a minority of instances; the latter is the product of a deep-seated and violent inflammation of all the structures of the skin, which, even in varioloid, suppurates as a rule.

Chapter XII., on diseases of the skin, is short, but not, perhaps, actually deficient. The advocates of the importance of parasitic growths in some cutaneous affections will not be satisfied with the small space allotted to the statement that, in favus only, the microscope affords us, by their discovery, a certain means of diagnosis. A fuller description, with some illustration, of these epiphytes, and (in the last chapter) of the different *entozoa*, of which, while the others are described, only *tænia solium* is depicted, would, we think, bring this part of the volume up to the level of the remainder, and render it complete for every reader.

Having now made a careful and impartial examination of the whole work, we can do no other than express of it a highly favourable opinion. It is not only a good, but, at present, the best manual of Medical Diagnosis. It has been prepared with careful research among books, at the bedside, and in the autopsy; and it is made available by a good arrangement, and a style of unusual ease, clearness, and finish. It is at the same time less diffuse and more readable than Dr. Barclay's treatise, the only one with which it can be compared. Without any of the boldness of an original innovator or leader, Dr. Da Costa has well opened a field of great importance; and his book may be placed in the hands of any student, or on the table of any physician, with the assurance that to digest and memorize the matter of all its pages will well repay the labour it costs. It has, moreover, been brought out by its publisher in good style, with clear type and excellent paper. It may be welcomed as a text-book which will do credit to our national medical literature.

ART. X.—*On Diseases of the Throat and Windpipe, as reflected by the Laryngoscope: a Complete Manual upon their Diagnosis and Treatment.* Embellished with 116 engravings. By GEORGE DUNCAN GIBB, A. M., M. D., M. R. C. P., London; Assistant Physician and Lecturer on Forensic Medicine, Westminster Hospital. Second edition. London, Churchill : 1864. 12mo. pp. 481.

THE study of the diseases of the throat and windpipe, and their treatment, have received a new and powerful impetus from the introduction of the laryngoscope. By it the eye is enabled to detect changes, of which many could only have been suspected, and others would have been shrouded in impenetrable darkness. By it, too, the skilful hand is guided to the local treatment of diseased surfaces with extraordinary certainty and facility, and to the removal of morbid growths by the natural passages. It is strange that an instrument which opens such new fields of research, and affords such valuable aid in therapeutics, should have been so long in establishing its claims upon the profession. First brought to perfection in Germany, it was long before France or England appreciated its capacities and its advantages; and in our own country, few are even now familiar with its use. The work of Czermak, translated for the Sydenham Society, a small pamphlet by Dr. Gibb, and a few articles in the medical journals, comprise nearly all that our language can boast upon the subject. While we have been thus dormant, the Germans have pushed forward their investigations with characteristic zeal. Czermak, and his earliest student, Semeleider, as well as Voltolini, Turek, and Störk, in Germany, have been unwearied in their prosecution of this branch of science. Moura and others in Paris and in England, Gibb and Johnson in London and Walker in Petersburg, have followed faithfully and assiduously in the steps of their German predecessors.

The work now before us is, without doubt, the most elaborate which exists upon the subject. Although it is called a second edition, it is in fact a new work, as the author states, in his preface, that "the introduction of the laryngoscope has added so much to our knowledge of the throat and larynx, as to render it necessary that the greater part of the subject should be rewritten." A glance at the table of contents shows how thoroughly the author has explored his field. The chapters treat successively of diseases of the upper air passages; diseases of the vocal cords; inflammatory, specific, and exanthematous diseases of the throat; diseases arising from systemic changes; nervous affections; diseases of the mouth, nose, and continuous passages; affections of the trachea; extraneous substances in the throat; diseases and injuries of the hyoid bone; injuries of the throat; and, finally, the laryngoscope. A glossary has been appended to the work, and this we regret, inasmuch as the majority of terms for which a glossary would be needed are words of the author's own coining. We certainly cannot compliment him upon his success in this department, and we think he must ignore altogether the admirable principles laid down by Archbishop Trench upon the introduction of new words. Aeantophonia, contendophonia, and the various other phonias which the author brings to our notice, seem to us as uncalled for, as they are unsound in their formation. Surely no physician needs a glossary for dysphagia, dyspnoea, &c. Epiglottitis, we think, would have been better if it followed the analogy of Iritis; and epiglottisation conveys no meaning save

what the author chooses to apply to it. But will Dr. Gibb tell us what he means by a "*cranky*" voice? He uses the adjective two or three times, as, *e. g.*, p. 269, in speaking of a gouty patient. We might suppose he meant harsh, but our "*Unabridged*" gives us only "*sprightly*."

The author's style is never easy and flowing, and at times it is careless and wanting in grammatical accuracy. Thus, on page 107, he says: "So frequent are cases of functional aphonia, and considerable as the number has been of examples sent to me by various practitioners, that I am actually embarrassed," &c. Again, on page 239: "And from there being found the compound granular corpuscles, it would seem to indicate the first stage of inflammation." On page 443, in speaking of Gareia's experiments in auto-laryngoscopy, he says: "I take this opportunity of declaring that these experiments are some of the most important that have ever been or likely to be made." And, once more, on page 449: "Ordinarily, I seldom darken my room any farther than with the usual linen blinds." Dr. Gibb has a "preferential liking for his own" écraseur; but is that more than simply a preference? And this leads us to mention the author's renunciation of all egotism, a renunciation which a perusal of the pages will, we fear, scarcely confirm. He speaks of applying a solution of argento-nitrate of mercury to the interior of his own larynx, and says it was "probably the first occasion that such a proceeding had been attempted upon oneself" (one's self). And in speaking of elephantiasis of the throat, p. 273, he says the case was the first of the kind he had examined with the laryngoscope, and "probably the first in this or any other country which had been thus inspected!" We are half inclined to remind our worthy author that those cold-blooded, energetic Germans, with their large hospital fields, and their *deutscher fleiss* do not leave much untried, especially when they are the acknowledged leaders. Numerous other instances scattered through the book would, we think, subject our author to the soft impeachment; but then he has the excuse of having accomplished much in his department, and he has certainly given us a book valuable in many respects. We propose to give our readers a cursory glance at its pages, regretting that our time forbids a more detailed consideration.

The general diseases of the windpipe are treated quite at length, although there is nothing very new presented, save the laryngoscopic appearances of ulceration, of follicular disease, etc. Dr. G. recommends the local treatment of follicular disease and of chronic laryngitis, preferring a full-bellied camel's-hair brush upon a bent whalebone to the ordinary sponge; and he thinks that a solution of nitrate of silver, 3ij—iv, ad unciam, is by all means the most desirable: indeed, a weaker solution he regards as of no value whatever. The advantages of the laryngoscope are abundantly shown in the precision with which the diseased surface alone may be touched. The section upon the diseases of the epiglottis is quite instructive, and we do not remember that our attention has been hitherto called to the deviations of the epiglottis from the vertical position. The author says: "In *eleven per cent.* of mankind, it was found to be oblique, very much or semi-pendent, or nearly quite horizontal, in persons apparently healthy." His examinations included "680 healthy persons," and the obliquity was observed in a passive condition of the epiglottis, independent of the movements of swallowing, etc. He found it in both sexes, at all ages, and in some cases congenital. This altered position may present obstacles to the examination with the laryngoscope; and still more, it may be the cause of great danger to life, as in case of being pressed down by a probang introduced in ignorance of the pendent position. Among other causes, the author says it

arises "from frequent attacks of cold, and cynanche in a lax habit : follicular disease is a common cause." It produces oftentimes urgent dyspnoea, dysphagia, and irritation in the larynx, as shown by coughing and hoarseness. Dr. Gibb's treatment seems to have been, locally, mineral solutions in the form of showers, and astringent gargles, in addition to constitutional treatment. There are numerous instances brought forward of tuberculous ulcerations of the vocal cords, larynx, and trachea, and their appearance is well represented in the accompanying wood-cuts.

In Chapter II., the advantages of the instrument are well shown, by its clearing up all doubt in those frequent cases of functional aphonia, whether from emotional causes, impaired innervation, or hysteria, &c. In the section upon organic aphonia, the subject of vegetations and growths is treated at length, and with much interest. Here the laryngoscope is alone our means of accurate diagnosis, and our most valuable aid in the removal of these growths. The author's laryngeal écraseur resembles Wilde's aural polyp snare. In many of his cases, however, local applications succeeded in producing absorption. In performing the operation, he either produces anaesthesia by the bromide of ammonium in large doses internally, or he sometimes gives a few whiffs of chloroform ; and the latter he prefers. He seems not to have practised local anaesthesia, as Semeleider has successfully done, by painting the fauces with a solution of morphia and chloroform. The polypi which he removed were found as usual to consist of fibres in a basement membrane, with numerous epithelial cells.¹ Certainly, nothing can prove more clearly the value of the laryngoscope than the removal of these troublesome growths, which in many cases have been the cause of hoarseness and aphonia for long terms of years. By the removal of the growth, these troublesome symptoms are at once and permanently relieved. We trust that the reader of the volume will not shrink from the closing section of this chapter, treating, as it does, of acantophonia, contendaphonia, diplophonia, and ischophonia. Indeed, we think his curiosity to know what it is all about will carry him through.

The laryngoscopic appearances in acute catarrhal laryngitis "are those of intense inflammation, for the lining membrane of the larynx is seen to be of a bright and vivid scarlet redness, with tumefaction varying in amount but generally prominent on the false vocal cord,² which may sometimes wholly conceal the view of the true cords. * * * It is the approximation of the swollen false vocal cords, which generally gives rise to the whistling or lisping respiration and the most urgent dyspnoea, and not the closure or narrowing of the true glottis as has been generally supposed, although sometimes the glottis is spasmodically narrowed." The same strong solution of nitrate of silver, mentioned above, is recommended as a local application ; if this does not succeed, the author advises the inhalation of the steam of boiling water, and, as a last resort, tracheotomy.

Edema of the larynx is divided into supra and sub-glottic, the effused material being in the first of a serous and in the second of a fibrinous character ; the first, although apparently more dangerous, is, in fact, more amenable to treatment by early scarification ; strong astringent solutions

¹ None of the cases presented by the author equal in interest the second of two reported by Dr. Semeleider, of Vienna, and republished in the N. Y. Medical Times, vol. viii., Nos. 22, 23, and 25.

² We wish our author had rejected this phraseology so unfortunately fastened upon us, and followed Semeleider's nomenclature of ventricular (false) and vocal (true) chords. We object, too, to the author's spelling ; it is not a piece of string of which he is speaking, but the string of a musical instrument !

are occasionally of great value. The second form, the author says, is described for the first time. He says, p. 211, "In my dissections of the larynx I have sometimes found a thin yet distinct layer of areolar tissue between the cricoid cartilage and mucous membrane, and sometimes it is somewhat lax; under such circumstances, if inflammation were present, a submucous effusion would be liable to occur; but as the resistance is greater below than above the glottis, serum is exuded from the surface of the membrane, and fibrine remains behind." Quoting the opinion of Hasse, Erichsen, and Hewett to the effect that effusion cannot pass below the glottis in consequence of the absence of cellular structure, and that hence there is no such thing as sub-glottic œdema, Dr. Gibb says:—

"The views enunciated by those whose writings have been quoted are held by all pathologists, and it might seem an unwarrantable presumption on my part to dispute their correctness; indeed such is not my intention, but, as a searcher after truth, whilst I acknowledge that, as a rule, œdema of a supra-glottic nature rarely extends below the true glottis, yet the laryngoscope has revealed that isolated or exceptional cases do sometimes occur. If the two forms coexist, it is not by extension of the one to the other, for the simple reason that the effusion in one is chiefly serous, and in the other fibrinous; and as has been most correctly and I may say indisputably observed, the true cords themselves do not become oedematous, and, therefore, the one cannot extend or pass into the other."—pp. 212, 213.

The author cites four cases of sub-glottic œdema in which recovery took place; in only one of these, however, does he give us his treatment; in that case it consisted of tartar emetic, acetate of ammonia, mercurials, inhalation of steam, and nitrate of silver locally. Scarifications in this form do more harm than good.

In croup, our author recommends depletion and emetics; he has found a strong decoction of senega to produce vomiting and the discharge of membrane, when everything else seems to fail. He does not advocate tracheotomy, but, if it should be performed, he prefers the method of excising a circular portion of the trachea, thus dispensing with the use of the canula. Diphtheria he divides, according to Mr. Hart's classification, into simple, croupal, and malignant. "That it can be diminished in its frequency," he says in p. 239, "and its propagation arrested by the most vigorous sanitary measures, is a fact which is indisputable"! We would be glad if Dr. Gibb's statement could be borne out in the future, but we have grave doubts upon the point, for the disease seems to occur with equal severity under the most favourable sanitary conditions; such has been, at least, our own experience.

We are surprised in coming to the section upon cancer of the larynx, in chapter four, to find it so barren, no one case being given in which the laryngoscope had been used.

We pass on to "saccharine throat, a new and distinct malady," under the head of diseases from systemic changes. The author has already described in the *Lancet* of May, 1860, a peculiar expression which he terms the "atheromatous expression," characteristic "of certain changes going on in the system, but especially of the conversion of the saccharine element into fat and its compounds." These are either deposited or cause a fatty disintegration of the tissue, an atheromatous condition of the arteries, &c. The distinctive features in the diagnosis of saccharine throat are three, viz: "The atheromatous expression, a follicular affection of the throat, and the peculiar nature of the secretion, with the sweet taste invariably present." The face is said to have "a greasy aspect, the nose and both upper and under lips seem as if slightly swollen, the eyes are bright and

watery, there may be an *areus senilis* or *annulus adiposus*, and the *conjunctivæ* look fatty." The secretion is of an oily character poured out from the prominent follicles, and beneath the secretion the fauces and mouth have an oily glistening appearance. Occasionally diabetes is also present, but not necessarily. Iodine and bromine in small doses combined with ammonium, a vegetable tonic, and the regulation of the diet seem to be the chief reliance of the author in treating this disease. He claims that saccharine throat is as easily recognizable as Bright's disease, or as Addison's; but as he has "known it for seventeen years," and gives us but three meagre reports of cases, we suspect it must be either rare or not so clearly marked as the author seems to fancy.

In the section upon tracheotomy we are glad to see that Dr. Gibb recommends Langenbeck's double hook. We have seen this instrument do such admirable service in the hands of that most accomplished surgeon that we think it deserves a place in every practitioner's tracheotomy case.

We pass on to the closing chapter on the laryngoscope itself, remarking simply that the author's separate treatise upon this subject is contained in this chapter and in cases scattered here and there through the volume. A brief history of the origin and progress of this branch of science opens the chapter. In speaking of Dr. Türck, whose name is associated with the earliest uses of the instrument, the author styles him "chief physician of the General Hospital at Vienna." Dr. Gibb has made a slight mistake here, as, in the first place, no such office exists, and, in the second place, Dr. Türck is a *privat dozent*, *i. e.*, one of the third grade in the organization of that great institution. He prefers the mode of illuminating by the spectacle reflector, which we are glad to see he credits to its rightful source, Dr. Semeleder, an omission in the author's separate treatise. He generally uses for reflection an argand gas-burner or a moderator lamp, either of which should have a glass or metallic reflector behind them. As for the laryngeal mirrors, he prefers those of glass, and having either a circular or quadrangular shape, with the edges rounded off. For autolaryngoscopy he recommends Czernak's apparatus. The chapter gives the most general hints only with regard to the use of the instrument, and we fear that a tyro in the art would seek in it for advice in vain. Surely he knows better than any one else the various difficulties which may be presented to the examiner, and we trust that the promised second edition of this chapter, as a separate work, will contain more numerous and useful suggestions on this point. The instruments which the author brings forward as his own are the écraseur, of which we have already spoken; a "laryngeal fluid pulverizer" (an unfortunate name, we think), consisting of "a curved tube of silver, with an India rubber receptacle at one end and a platinum capsule at the other, so finely perforated that the holes are invisible to the naked eye;" and, finally, a searifier for œdema of the larynx. In speaking of Moura's écraseur, which has an arrow for piercing the growth at the moment of excision, he says it "insures immediate withdrawal;" but he must know that Moura himself reports a case in which, notwithstanding the arrow, the growth fell down into the trachea.

We have gone far beyond our proposed limits, being betrayed into such a course by the interest the volume awakens in itself and as a forerunner in this department of English medical literature. Dr. Gibb deserves great credit for the large number of clinical records he gives, and we know of no work where so many laryngoscopic cases are presented. The illustrations are well done, and the typography is excellent.

E. T. C.

ART. XI.—*Transactions of the Obstetrical Society of London.* Vol. V.
For the Year 1863. 8vo. pp. 330. London: 1864.

THE Obstetrical Society of London has been one of the most successful of the professional organizations of the present day. On its list of Fellows are inscribed over five hundred names, embracing those of all the leading obstetricians of England. An examination of its five volumes of transactions will furnish ample testimony to its progressive development in a scientific and practical point of view.

In the address of the retiring Vice-President, Dr. W. Tyler Smith, delivered at the first meeting in January, 1863, after some congratulatory remarks upon the success of the society in every point of view, a brief biographical notice is presented of the recently deceased Fellows, and then are briefly considered, first, the numerous trials for malpractice in midwifery which had taken place during the past year; secondly, the progress of ovariotomy during the same period; and, thirdly, the question, recently discussed, as to who was the actual inventor of the midwifery forceps. The address is very concise, plain, and unaffected in style; it offers, however, nothing of especial interest or value.

The professional papers which constitute the present volume of obstetrical transactions, are as follows:—

On “*Vaginal Lithotomy,*” by J. H. Aveling, of Sheffield. After a short history of the operation, a list of the cases, so far as they are known, in which it has been performed, and a detailed account of one in which Dr. Aveling was the operator, the following summary of the value of vaginal lithotomy is given:—

“Out of the thirty-five cases of vaginal lithotomy which I have been able to meet with, death has only followed in one (Mr. Erichsen’s), and in this case it cannot be properly said to have been caused by the operation. M. Velpeau remarks that the consequences of vaginal lithotomy are very simple. No artery of any size is wounded, the peritoneum is too far off to run the least risk, and the cellular tissue of the vesico-vaginal septum is too dense to allow of the infiltration of urine. In short, vaginal lithotomy may be now looked upon as an established operation; for even the chance of vesico-vaginal fistula occurring can be no longer urged as an obstacle. There can be little doubt but that for the future, when lithotomy has to be performed on the female, the vaginal method will be the one invariably adopted.”

Although by it vesical calculi can be safely and successfully removed, still, as Dr. Aveling remarks, in cases where the stone is small and friable, it ought never to supplant the more simple processes of dilatation and crushing.

“*Vesico-vaginal Fistula:* the mode of operating, and the results obtained in fifty-five cases, at the London Surgical Home.” By I. Baker Brown, Senior Surgeon to the Institution.

The operation of Mr. Brown is a very simple one; the patient, under the influence of chloroform, is placed as in lithotomy, or, without chloroform, on her hands and knees; the bent speculum is introduced; and if in the former position, the urethra held up by a pair of Vulsellum forceps. The fistule being held by a pair of forceps or transfixied by a curved needle, its edges are to be pared by knives of a particular shape. Needles of steel and of various curves, fourteen in number, each armed with a wire, are passed, one-quarter of an inch external to the denuded surface, through the coats of the vagina and the *muscular* tunic only of the bladder, and out

again on the opposite side at the same distance from the fistula. The wire is then pushed forward, seized by the forceps, and the needle withdrawn. The ends of the wire are finally twisted round and round by the fingers, or if too high up by Weiss' self-holding forceps. The ends of the wire being cut off, the operation is completed. The patient is put to bed on her side, with her knees drawn up, and a male elastic catheter, without stylet and with attached bag, introduced. At the end of from ten to fourteen days, the wires may be divided on one side the twist, and drawn out by the forceps.

Of the fifty-eight cases of vesico-vaginal fistula admitted into the London Surgical Home, fifty-five were submitted to operation; in the remaining three the operation was not performed because of the bad condition of the patients' bodily health, the result of syphilis.

Of the total number of operations, forty-three were followed by perfect cure; one was much relieved; two died; five were not cured; and four still remain under treatment, with every prospect of a favourable result.

Of the forty-three successful cases, in twenty-four only one operation was performed; in eight two operations; in five three operations; and in six more than three operations were necessary to effect the cure. Of the two fatal cases, one, a patient 56 years of age, died eighteen days after the operation, apparently from exhaustion; the other died seven days after the operation from pyænia.

Dr. Brown refers to eleven cases of vesico-vaginal fistula operated on successfully during his connection with St. Mary's Hospital. Of these cases, in seven the cure was effected after the first operation; in two after the second; and in two after more than two operations. He had also six cases in private practice, of which five were cured by one operation, and one by two operations. Taken together, this gives a total of sixty cases, of which the cure was effected in thirty-six by a single operation; in eleven by two; in five by three; while in eight, more than three operations were required before the fistula was closed.

Age had little or no effect upon the result of the operation. The patients were from 19 to 66 years of age, the operation proving as successful in the oldest as in the youngest. Neither did the duration of the fistula furnish any impediment to a successful operation. Although it had existed from two months to twenty years, the result was as satisfactory in many of the long-standing cases as in the more recent. Several of the patients had more than one fistula, which were cured by a single operation.

With respect to the causes of vesico-vaginal fistula; of the fifty-eight cases admitted into the London Surgical Home, forty-seven occurred in women after a labour of over twenty-four hours' continuance; thirty-nine after a labour of thirty-six hours or over; seven after a labour of two days; sixteen after a labour of three days; three after a labour of four days; two after a labour of five days; two after a labour of six days; and one after a labour of seven days. In the whole number of cases, instruments had been used in twenty-nine; exactly one-half; in four only of these had the labour continued less than twenty-four hours, and, with seven exceptions, the patient had been in labour thirty-six hours or more before instruments were used.

In twenty-four of the fifty-eight cases the fistula occurred after the first labour; in seven after the second; in five after the third; in four after the fourth; in six after the fifth; in two after the sixth; in five after the eighth; in one after the ninth; in one after the tenth; and in one after the fifteenth; in two no notice is taken as to the number of preceding labours.

In a large proportion of the cases the birth of a very large child is noted

—it weighed, in some, fifteen pounds, and in one, where the lesion happened at the fifteenth labour, the child weighed seventeen pounds.

From the foregoing statistics it is evident that the most common cause of vesico-vaginal fistula is protracted labour.

In many of the cases, during the continuance of the fistula, the patient bore several children, apparently without inconvenience, and in a few, subsequent to the cure of the fistula by operation, the patient had become more than once a mother, without a recurrence of the lesion.

"Case of Polypus Uteri complicating Labour," by Henry L. Freeman, M.R.C.S. A farmer's wife, æt. 37, in labour with her fifth child. The vagina found to be occupied with a large, soft mass, bigger than the head of the child as felt presenting above the tumour. The tumour had given to the patient no trouble during her pregnancy. As labour progressed, it was gradually forced down, and protruded beyond the vulva, the head of the child following closely upon it. There was no hemorrhage or undue pain. The labour was in no manner interfered with by the presence of the tumour, and terminated favourably to both mother and child. The expulsion of the placenta speedily followed, still without any hemorrhage. The tumour was now gently pressed back into the vagina, and the patient left quite comfortable. Upon a further examination, though the finger could be passed quite round the mass, no distinct pedicle was discovered. No unusual amount of lochial discharge occurred, nor any excessive pain. The next day, however, pains of a decidedly expulsive character set in, and the tumour was partly protruded beyond the external parts. Great pain was felt in the back and loins, which was relieved by an opiate. No hemorrhage. On the third day the bearing down pains increased, and a large, offensive, flesh-like mass was protruded beyond the vulva. It was without tenderness. A thick pedicle could now be felt high up in the vagina. Around the portion external to the vagina a piece of strong whalecord was tightly tied, and the mass removed with the knife. The ligatured end was now gently passed to the upper part of the vagina. The patient felt greatly relieved by the operation. The pedicle was found to be attached just within the os uteri, and seemed fully three inches in diameter. A very fetid discharge continued for some six days, when the ligature came away; warm water was freely used with a syringe. From this time the patient continued to improve. She nursed her infant, and made a good recovery.

The tumour weighed three pounds eleven and a half ounces; it was exceedingly soft and flabby, having somewhat the appearance of the placenta; it contained a number of cells varying in size from that of a pea to that of a nut, and was composed of fibres and bloodvessels.

An examination eleven days after delivery, showed that the os uteri was very nearly closed, and that not a vestige of the pedicle remained. The patient had regained her usual health and strength.

"Observations on Ovariotomy, Statistical and Practical," by Charles Clay, M.D., of Manchester. Dr. Clay states that for the last twenty years he has been extensively associated with some of the largest operations connected with abdominal surgery, having, since the year 1842, made the peritoneal section 116 times, namely, 108 times for the extirpation of diseased ovaries; four times where the ovarian tumour was ent down upon, it being too firmly and extensively adherent to be extirpated, with the view of breaking it up internally, and establishing by seton an extensive neceration; once for the Caesarean operation, and three times for the entire removal of both uterus and ovaries.

Of the 108 cases of ovariotomy, seventy-four were entirely successful, the patients living in the full enjoyment of health for many years afterwards, many of them having children of both sexes. In only two cases did the disease return in the opposite ovary. In one of the latter death took place five years after the operation. In the other, the opposite ovary became diseased sixteen years after the first operation, and attained a very large size. Having emigrated to the United States, she placed herself under the care of Dr. Atlee, of Philadelphia, by whom she was operated upon most successfully, being quite restored to health, and rendered capable of attending to her household duties.

Of the 108 ovarian cases, only 34 died, or less than 30 per cent.: 10 from the immediate effects of the operation, or from what is termed the shock; 10 from peritoneal inflammation, generally about the third day; 12 from prostration, about the sixth or ninth day; and 2 from hemorrhage. The deaths from shock and those from inflammation occurred chiefly in young females. The majority of the deaths from prostration were in elderly females, about the period of the cessation of the menses, and took place about the sixth day. When it occurred from this cause in younger females, it seldom happened before the ninth day. One of the cases from hemorrhage took place soon after the operation, from an exudation of blood at a large cut surface, where extensive adhesions had existed. In the other case, the patient lived thirty hours, when, after a sudden start, the pedicle ligature was cast off, and internal hemorrhage ensued, quickly followed by death.

Appended to this paper is the history of a most interesting case, in which the entire uterus and appendages were successfully extirpated through the abdominal parietes, the patient surviving the operation, and regaining health and strength.

"On a Variety of Chronic Pain in the Back," by Henry Gervis, M. D., of London. Dr. Gervis describes a case occurring in a female 30 years of age, who, for a period of six years after confinement, had suffered, with but little intermission, a pain in the lower part of her back. The patient had a somewhat worn aspect, but did not appear otherwise unhealthy. She had never suffered from any other symptom of uterine disease, excepting an occasional catamenial irregularity and slight leucorrhœa; nor, upon examination, was the presence of any such disease detected. On a careful exploration of the back, it was found that the pain was especially felt at the left sacro-iliac synchondrosis. Percussion or pressure at this part indicated decided tenderness. Taking hold of the ala of the corresponding ilium, and moving it backwards and forwards, occasioned a considerable increase of the pain, which was always least when the patient was at rest in a recumbent posture. It was increased by the act of walking, and greatly aggravated by any sudden twist or shock imparted to the articulation, as in slipping over the kerb, missing a step, treading upon a loose stone, etc. The general symptoms of the patient resembled somewhat those of hectic fever, with loss of flesh and appetite, and a sense of weariness. No local fulness or thickening could be detected externally, but the tenderness was considerable and limited to the synchondrosis. The patient was not a rheumatic subject; though never very robust, she had previously enjoyed good health.

Dr. Gervis considered the case to be one of congestion or sub-inflammation of one or more of the tissues of the synchondrosis, of a chronic character, following confinement, but unconnected with any existing uterine

disease. It was treated by rest, the local application of blisters in narrow strips, about two inches long and one broad, with, internally, the bichloride of mercury in decoction of cinchona, three times a day, and at night some extract of henbane and Dover's powder, and occasionally an aperient. The patient soon began to improve. Within eight weeks she was completely relieved from all pain, her general health becoming, at the same time, re-established.

"In some cases," Dr. Gervis remarks, "there is pain in the back, apparently of a rheumatic character, affecting the ligamentous and fibrous tissues about the articulation, and in some the periosteum. In these the iodide of potassium, in combination with alkalies and other anti-rheumatic remedies, is of especial service; but in others, as in the case detailed, the affection is certainly of the deeper seated tissues, the cartilage and fibro-cartilage which connect the bony surfaces. In four cases which I observed, the pain came on after parturition, and in two the children were said to have been unusually large. Possibly, in these, this was the direct mechanical cause of the subsequent condition of the articulation. The patient whose case is detailed had borne no children subsequent to the occurrence of the pain; but another patient, in a labour subsequent to the one from which she dated the commencement of her pain, suffered much from it during labour, and from its aggravation afterwards."

Sometimes there is an increase of pain during the catamenial period, which would readily lead to the supposition that some uterine mischief was its cause; but as the variety of pain referred to may certainly coexist with a healthy uterus, its increase at the catamenial period is probably due to that customary amount of lumbar uneasiness which often accompanies the periodic congestion of the uterus.

Dr. G. presumes that these cases are mild forms of an affection, whose severe form would be represented by abscess. The cases which occasionally occur of subacute or chronic inflammation, and of threatened or actual suppuration of the symphysis pubis, generally after severe labour from large size of the child, and whose diagnosis is perfectly clear, Dr. G. thinks are confirmatory of the views he would suggest of the particular form of "pain in the back" above described.

"Case in which Amaurosis was observed eight times in succession." By Dr. Henry E. Eastlake, of Ireland. The patient, thirty-four years old, the wife of a painter, had nine children at full term; no miscarriages. Had always enjoyed good health. As far as could be ascertained, all her labours were natural. Had never lost more than the normal amount of blood. States that after her first confinement, her recovery was prompt and without any accident; but a day or two after her second, and seven succeeding labours, she had become suddenly totally blind of both eyes, and also partially unconscious. She regained first her consciousness, and at the end, on an average, of from three to five weeks subsequently, the amaurotic condition disappeared.

Dr. E. notices a few cases which he has met with on record of amaurosis in the parturient and puerperal female, but which in their details do not in all respects agree with the one described by him.

"Case of Caesarean Section." By J. G. Swayne, M.D. The subject of the operation was a dwarf, 42 years of age, with an extremely narrow and distorted pelvis. The section was performed after labour had continued over sixty hours. The child was alive when removed, and continued to do well; the mother died forty-two hours after the operation, evidently from the shock of the operation and the subsequent peritonitis.

"The Galactagogue Properties of Paraffinization, with eight cases." By Thomas Skinner, M.D., of Liverpool. The cases related by Dr. Skinner

illustrate very strikingly the specific effect of localized galvanism in increasing the mammary secretion when defective or absent, from atrophy of the gland, mental emotion, diminished nervous energy of the parts, the effects of mammary inflammation and abscess, or where the secretion has been inadvertently arrested by the administration of certain medicines.

"Medical History of Woman in Southern India." By John Shortt, M. D., Chingleput, Madras. Dr. S. presents in this paper a highly interesting account of the ceremonies performed by the women of the four principal castes of Southern India—the *Brahmins*, *Hindoos* or *Malabars*, *Mahomedans*, and *Pariahs*, and the mode of treatment of the females of each caste from the period of puberty to that of childbed, with a few instances to illustrate the kind of obstetrical practice pursued in that portion of India.

The chief interest of this paper would be greatly impaired were any of its details to be omitted; we shall be obliged, therefore, to pass it by without making any attempt to present an analysis of it.

"Fibrous Polypus of the Uterus." By Graily Hewitt, M. D. In this case the polypus consisted of a hard, rounded, pedunculated tumour, of the size of an egg, lying in the vagina, just outside the os uteri. The peduncle was apparently attached to the anterior wall of the uterus, and measured three-quarters of an inch in diameter. Being cut through with a pair of curved scissors, no hemorrhage followed, and the patient did well. The polypus was of the ordinary variety, nearly round, and rather more than two inches in diameter. Dr. H. stated that the chief interest of the case consisted in the fact that the nature of the disease was for over two years unknown and unsuspected by the patient. He remarked, also, as to a peculiar pallidity and general aspect of the female which very closely simulated that which is often observed in cases of uterine cancer; this peculiar appearance resulting in both cases from the continuous loss of blood.

"Further Observations on the Use of Anæsthetics in Midwifery." By Charles Kidd, M. D., etc. The points discussed by Dr. Kidd are the result of subsequent experience (since his communication, vol. ii. of the *Obstet. Trans.*, p. 340) as to the caution to be observed in cases of midwifery attended by severe hemorrhage; the great value of chloroform in cases of retained placenta; the usefulness of alternating the administration of ether with that of chloroform, where the pulse sinks, as in some exhausting operations like ovariotomy. He refers to the peculiar immunity from danger in the use of chloroform or ether in obstetric practice, due perhaps to the active condition of the respiratory, abdominal, and reflex system of nerves at the time, the subjects also being healthy. He directs particular attention, in any case in which asphyxia shall result from the use of chloroform, to a new mode of resuscitation, consisting in the application of the Faradization current, not to the heart, as heretofore, but to the phrenic nerve and diaphragm.

"Case of Interstitial Fœtation. Death." By Dr. Greenhalgh. *"Case of Tubal Gestation. Death."* By John Marshall, Esq., with a description of the condition of the parts involved, by Dr. G. Hewitt. *"Case of Extra-Uterine Fœtation, in which two Fœtuses were found in Connection in the same Tube. Death."* By N. J. Haydon, M. D., with a report on the case by Drs. Tyler Smith and Braxton Hicks. All cases of extra-uterine fœtation are surrounded with no trifling degree of interest, and when a large number of such cases, carefully observed and accurately recorded, have been accumulated and compared, they will be found perhaps to throw additional light upon the physiology of conception and gestation. We cannot, however, well spare the space necessary to present the history, in sufficient detail, of the several cases referred to above.

At the meeting held April 1, 1863, Dr. Tyler Smith presented to the society a specimen of tubercular foetation with twins, the same as described subsequently by Dr. Haydon, on which occasion Dr. Oldham called the attention of the fellows to the possibility of performing gastro-tomy in certain cases of tubal pregnancy, where death was about to result from internal hemorrhage. The diagnosis in sudden tubal rupture was well marked. Dr. Barnes thought that in tubal pregnancy, after the third or fourth month, the operation would be not only feasible, but expedient.

"Sequel to a Case related in Vol. IV. of the 'Transactions of the Society, of Retained Menses of two Years' Duration, caused by Atresia Vaginae, and treated by Puncture of the Uterus per Rectum." By I. Baker Brown, Esq., etc. In this case the fistulous opening between the uterus and rectum closed shortly after menstruation, January, 1862. By the 10th of April ensuing the uterus was refilled with the menses, and the patient suffered greatly. The uterus was again tapped per rectum, and a large quantity of the menstrual fluid drawn off. In May the patient menstruated through the canula. An attempt was now made to keep the fistula open, by introducing through the canula some silver wire so twisted that when in the uterus it would open out. The canula, which had been in a month, was then withdrawn, and after eleven days the wire also. From June to November there was no menstrual discharge. The patient suffered much pain. November 27, the uterus being sufficiently distended to admit of puncturing, a trocar, rather more curved than that used before, was introduced, the uterus being firmly pressed down from without by an assistant. A small portion of the bladder appears to have got nipped between the uterus and the rectum, at the point pierced by the trocar, for as the trocar entered, some urine escaped along its side. On the withdrawal of the instrument, a large quantity of the retained menstrual fluid was discharged through the canula. A tube was now introduced. For a day or two the urine was discoloured with blood. January and February, 1863, the patient menstruated per urethram. The tube was now removed, having remained in two months. After the removal of the tube, the patient menstruated twice per urethram, in March and April, without any inconvenience. She became quite well, and resumed her duties as a housemaid. In the first week in May she again menstruated, the fluid coming per rectum as well as per urethram.

"Some Remarks upon the Treatment of Mechanical Dysmenorrhœa and Sterility, with a Description of a New Metrotome." By R. Greenhalgh, M. D. The instrument proposed by Dr. G. for the treatment of certain cases of dysmenorrhœa and sterility by division of the os and cervix uteri, is thus described: It is $11\frac{1}{2}$ inches in length, and ends in a blunt extremity like a uterine sound, $2\frac{1}{2}$ inches long. It consists of two lateral halves, which can be firmly clasped together. Each half contains an inclined plane, regulated by an adjusting screw, upon which a blade is made to move downwards and outwards by pulling the handle of the instrument. In using it, the patient being placed in the usual obstetric posture, and the position of the uterus previously ascertained by the sound, the extremity of the metrotome, well greased and guided by the finger of the right or left hand, is passed through the mouth and neck of the womb into its cavity until the shoulder of the instrument is in close contact with its external orifice. The instrument being now held firmly in situ, and the finger withdrawn from the vagina, traction made on the handle, which is connected with the two blades, will cause them simultaneously to diverge and cut their way rapidly through the strictured canal. The blades being sheathed

at the shoulder, the instrument may be withdrawn from the vagina without fear of injury to the latter. A sponge tent, or, still better, a silver stem of the requisite size, may be now passed through the divided parts into the uteruses, and left there two or three days, when all fear of union of the divided edges will have ceased.

Dr. G. states that during the preceding ten months he had divided the os and cervix uteri in upwards of thirty cases, without a single casualty. Two ladies were operated on at his residence and were able to walk shortly afterwards to their homes without pain, and with little difficulty. On several occasions, also he has operated upon out-patients of St. Bartholomew's Hospital under similar circumstances and with like results.

Out of twenty-two cases which had come under his notice from time to time subsequent to the operation, eighteen had benefited considerably. Twenty were married and three single. Of the former, five had had children, but had been sterile for periods varying from four to eleven years; three had since become pregnant, one five, another three, and one two months after the operation. The two former were progressing most satisfactorily, while the third miscarried at about the sixth month. All these patients had been under treatment for dysmenorrhœa, and had derived but little and only temporary relief from the treatment to which they had been subjected; seven were cases of congenital and sixteen of induced dysmenorrhœa; eleven had been wholly free from pain since the operation, seven suffered only trifling discomfort, while the remaining five had experienced but little relief. In two of these there was persistent retroversion, with chronic metritis; in two the latter affection alone, while in the remaining case there is no apparent uterine disease, but the patient is highly hysterical, and has suffered repeated attacks of neuralgia.

The cases in which Dr. G. has found the division of the os and cervix uteri especially serviceable are, dysmenorrhœa, congenital and induced; sterility, where there has been more or less obliquity of the uteruses, with a small external os uteri; endometritis, where accumulations of mæo-pus take place in the uterine cavity; fibroid disease of the uteruses, accompanied with great pain and discharges of coagula, and suspected and determined cases of intra-uterine polypus.

"Case of Fibroid Tumour, situated in the Anterior Wall of the Uterus, and which obstructed Labour." By R. Barnes, M. D., Lond. The patient died apparently from rupture of the bladder occurring during labour. A very hard tumour of the fibroid kind was found in the anterior wall of the uterus at the lower part. It seemed probable, from the situation of the tumour and from what could be gathered from the history of the case, that it had been driven down before the child's head, and jammed against the symphysis pubis, closing the urethra. In the bladder two lacerated openings were found.

"A Case exhibiting the Association of Spina Bifida with Hydrocephalus." By R. Barnes, M. D., Lond. Mr. Hutchinson believes that hydrocephalus and spina bifida owe their origin to a strictly analogous morbid condition, the one of the cerebral arachnoid and the other of the spinal arachnoid. If this be so, the occasional coincidence of the two affections at different parts of the serous investment of the nervous centres is readily understood. Mr. Hutchinson states that in spina bifida he has found the posterior portions of the vertebrae not absent but simply displaced; the missing portions of bone may be found in the walls of the cyst, being carried away from their normal position by the growth of the sac.

In the case of Dr. Barnes the child was born with spina bifida at the

lumbar region. For the first nine months after birth there was no evidence of hydrocephalus; but from that period the head began to enlarge rapidly. A photograph, taken when the child was a year old, shows an advanced stage of hydrocephalus with a large tumour in the lumbar region.

“*Face Presentation.*” By R. Barnes, M. D., Lond. This gentleman exhibited a stereoscopic photograph of a child born with face presenting taken on the third day after birth. It exhibited in a marked degree the distortion during labour in this presentation when the cranium is plastic. The occiput is flattened in, and the frontal region elevated and bulged out. The eyes, especially the right one, were rendered prominent. The mother said the deformity had already abated considerably, but Dr. B. observed that the head would probably retain to some extent in after life the peculiar moulding imparted to it during birth.

“*Case of Tuberculosis of the Uterus.*” By R. S. Tomlinson, Esq. This is a very interesting case of a form of uterine disease not often accurately diagnosed. It occurred in a maiden lady, aged fifty-five years. The chief symptoms during life were a profuse and continued uterine discharge of an inodorous, watery, dirty yellow fluid, unmixed with pain. Nearly a year after she came under treatment there was pain in the back and pelvis, which gradually increased in intensity; with enlargement of uterus, loss of appetite, frequent nausea and diarrhoea, quickened pulse, great emaciation, aphæe of the mouth and throat, œdema of the feet. Death took place fifteen months from the time she first consulted Dr. T.

On examination of the body the thoracic and abdominal viscera were found to be healthy, with the exception of the liver, which was enlarged and in a state of fatty degeneration.

“The uterus was as large as in the third month of pregnancy, measuring upwards of five inches from fundus to os, and, instead of the usual pyriform shape, presented an angular appearance, arising from a considerable prominence on each side, where the Fallopian tube leaves it. The cervix was greatly hypertrophied. The uterus, Fallopian tubes, and ovaries were filled with tuberculous masses, surrounded by a thick yellow matter, and on its removal the lining membrane of the uterus presented a pitted or honeycomb appearance from superficial ulceration as far as the cervix, where it was perfectly healthy. On opening the Fallopian tubes and squeezing them, pellets, varying in size from a large shot to a horsebean, firm in the centre and more or less softened on the surface, were thrown out with a sort of jerk. *There were no tubercles in the lungs nor in any other organ.*”

“*On the Use of Wire Loops, Horseshoe Wires, etc., for correcting Anteversion, Retroversion, Obliquities, and Prolapse of the Unimpregnated Uterus.*” By Charles Clay, M. D., Manchester. For the form, construction, modulus operandi, and advantages of the particular apparatus recommended by Dr. Clay we must refer to the paper itself. Any description of the instruments would be unintelligible if unillustrated by diagrams. The remarks of Dr. C. on the displacements of the uterus and the mechanical means best adapted to rectify them, with the discussion to which the subject gave rise among the Fellows of the society are highly instructive.

“*A Case of Face Presentation: Delivery by Forceps: subsequent Sloughing or Separation of the Mucous Lining of the Bladder and expulsion of the same.*” By W. Martyn, M. D. A very interesting case. An American accoucheur would most certainly have resorted at an earlier period to instruments, and, if he had not succeeded by so doing in saving the child, would unquestionably have prevented much suffering and considerable risk of life to the mother.

"Case of Ascites, with Ovarian Disease." By G. C. P. Murray, M. D. We see no particular instruction to be derived from this case unless it be, as the reporter remarks, to show the inefficiency of the palliative treatment by tapping in cases of ovarian disease, and to direct attention to ovariotomy as furnishing a greater chance for a permanent cure.

Mr. Sequira exhibited *a specimen of monstrosity*, born after four months' labour, the head presenting, with a bloody tumour protruding from back of the scalp feeling like a portion of placenta, and of the size of a turkey's egg. On birth the foetus was found to be anencephaloid, with club feet and hands, six distinct fingers and toes on either side, &c.

"Case of Syphilis after Vaccination." By R. Drnitt, M.R.C.P. The patient was a boy two years old, the second child of respectable parents, both of whom and the elder child said to be quite healthy, as was also the second child until three weeks after its vaccination, when three of the six vaccine vesicles were converted into indurated chancrea, soon followed by secondary eruptions of the skin and anus. There was no affection of the mouth or throat.

Dr. Oldham remarked that the possible occurrence of syphilis after vaccination was a very grave fact which had hardly excited sufficient attention. A case had come to his notice of a lady infected by syphilis through vaccination; a syphilitic sore occupying the seat of the vesicle and remaining unhealed for a long time. Two children vaccinated from the same child were unmistakably syphilized. The child from whom the lymph was obtained had no general eruption, but after a search two or three sores of a syphilitic aspect were found about the anns. The parents appeared healthy.

"Note of a Case of Associated Hydrocephalus and Spina Bifida." By W. Leishman, M. D. This case affords a striking illustration of the views of Dr. Hutchinson referred to in Dr. Barnes' paper already noticed.

"Abortion produced by Tents of common Sea-tangle—Laminaria digitata." By W. E. Pritchard, M. D., Glasgow. Dr. Pritchard's chief object in this communication is to call attention to this simple and cleanly mode of procuring necessary abortion.

"Diseased Cervix Uteri." Dr. Greenhalgh exhibited two specimens; the one of epithelial cancer involving the whole of the posterior and extending to the anterior lip of the womb, removed from a married woman under the influence of chloroform by the wire écraseur of Weiss, scarcely any blood being lost. The second was one of simple hypertrophy of the neck of the womb, $2\frac{1}{2}$ inches in length and $5\frac{1}{4}$ in circumference, taken from a married woman æt. 41 years. No blood was lost during or after the operation. Dr. G. remarked that this latter affection, uncomplicated as it was in this case with procidentia uteri, is of rare occurrence; it is frequently taken for the latter affection and treated by pessaries to the great annoyance of the patient and aggravation of the disease.

"Notes of a Case of Chronic Hydrocephalus." By H. M. Madge, M. D. These notes extend over a period of three years. They are peculiarly interesting, in a medical as well as psychological point of view. As Dr. Madge remarks, the rather unusual features of the case described by him are, 1st. The fact of the child surviving severe symptoms, indicative of a bad attack of acute hydrocephalus. 2d. The enormous size of the head, which is seldom met with except in connection with congenital hydrocephalus. 3d. The little interference throughout the disease with the nutrition and growth of the body. 4th. The perfect annihilation at first of all signs of intelligence, and their reappearance to a certain extent, after the lapse of several months.

The treatment most relied on was the administration of mercury in short courses, the application of blisters to the nape of the neck and behind the ears, kept open for a very long time. Tapping the head was not resorted to, the statistics of the operation being very unfavourable—the few cases in which tapping has been productive of benefit have been those in which the effusion into the brain has been the result rather of passive exudation than of active inflammation. In the latter case, even when the effused fluid is considerable, there are sufficient grounds for hoping that it may be absorbed.

"A Case of Stone in the Female Bladder. Vaginal Lithotomy." By I. B. Brown, F. R. C. S. In this case a stone weighing two ounces and five drachms was removed by the vesico-vaginal section. The patient recovered promptly without a single bad symptom.

"Three Cases of Retroversion of the Uterus." By R. Hardey, M. R. C. S., London. These cases differed widely from each other, both as to cause and symptoms; their history, as given in the paper before us, is replete with interest. In the remarks appended to the account of the cases, Dr. H. remarks very correctly that great diversity of opinion prevails as to the most appropriate treatment of uterine displacements. It is very evident that no strict or specific rules can be laid down for their management. Experience proves that each will demand a particular treatment. Dr. H. is well satisfied that in uterine malflexions, but small benefit is to be expected from "the intra-uterine use of mechanical contrivances, which are often of themselves causes of serious mischief." He does not agree, however, with those who denounce pessaries as prejudicial in cases of prolapsus of the uterus and vagina. In some of these cases he has found their judicious application of the greatest advantage. He is in the frequent use of globular or egg-shaped sponge pessaries in cases of prolapsus, and finds much good to result from them, when charged with astringent solutions, replaced twice daily, and reduced in size from time to time, until their use is no longer indicated.

"Craniotomy Forceps." Dr. Barnes exhibited and described a craniotomy forceps, which he believed to combine the advantages of those of Simpson and Murphy, and by a further contrivance which Dr. B. has added to it, to be more effective than any other instrument with which he is acquainted. For a description and drawing of the instrument we must refer the reader to the volume before us.

"Case of Ovarian Tropsy, treated by Tapping and Pressure: apparent recovery for three years and a half: return of disease: ovariotomy: recovery." By I. B. Brown, M. R. C. S. This case is one of essential interest, proving that no adhesions were produced by the previous tapping and pressure.

"Case of Distension of the Uterus in a Fetus impeding Labour," with a *"Report upon the Anatomical Condition of the Fetus."* By Drs. J. B. Hicks and H. Gervis. The bladder, urethra, kidneys and ureters normal; labia majora very small; vulva and vagina wanting; clitoris prominent, urethra opening at its extremity; uterus greatly distended, very tense, of a globular form, containing about three-quarters of a pint of flaky, serous fluid; the cornua much developed, exceeding an inch in length, and allowed the little finger to be passed into them from the interior of the uterus, through openings about half an inch in diameter and of a valvular character. The cornua were impervious at their free extremities; no fimbriae or other evidence of Fallopian tubes, on either side, save these closed cornua; ovaries flat, almond-shaped, about half an inch long, and attached to the sides of uterus at the base of each cornua. The uterus divided internally into two

cavities by a vertical septum, thinner than the walls, and having, near the fundus, an oval opening half an inch in diameter; no trace of either os or cervix, the double uterine cavity being completely closed. The uterine walls were thin and, internally, smooth and polished like a serous membrane. No vagina; lower half of rectum absent, the upper part terminating in a *cul-de-sac*, which was attached to the back of the uterus at about its centre. The usual place of rectum and vagina occupied by cellular tissue. No anal aperture, merely a shallow depression at its site. On opening the abdomen a small quantity of flaky fluid escaped; coils of intestines extensively adherent among themselves with adhesions in other portions of the peritoneal cavity, apparently the result of inflammation.

"Three Cases of Labour obstructed by Abnormal Condition of the Fœtus, with some other points of interest." By J. B. Hicks, M. D., London. In the first case there was ascites of the foetus, with cystic distension of its kidneys from obstruction in both ureters; peculiar, disintegrated condition of the placenta, punctured by crochet; recovery. In the second case the abdomen of foetus was enormously enlarged from distension of the bladder. In the third case there was very great distension of the maternal uteris; dropsy of the amnion; very large tumour on the fore part of neck of foetus. Induction of premature labour, foetal tumour punctured; recovery. Of the structure of the tumour on the neck of foetus an account is given by Drs. Hicks and Gervis.

"On Distension of the Bladder considered as a Cause of Post-partum Hemorrhage." By J. L. Earle, M. D. The manner in which Dr. E. believes distension of the bladder to produce hemorrhage after delivery is by its displacing the uterus, most generally either directly upwards or to one side of the central line; the result of this displacement is to prevent the uterus from contracting perfectly, and this, independent of inertia in the latter organ. Remove the urine and the uterus returns at once to its original position, contracts fully, and thus arrests the hemorrhage. The bare possibility of post-partum hemorrhage, independently of all other injury that may result from over-distension of the bladder during gestation, parturition, and subsequently, should render the obstetrician especially careful to secure a full discharge of the urine daily until delivery is effected, and to empty the bladder of any fluid it may contain immediately or very soon after the expulsion of the child.

"On Pertussis; its Causes, Symptoms, and Treatment." By Richard Marley, M.R.C.S., etc. This is a very good concise monograph on the etiology and pathology and treatment of hooping-cough, directed more especially, however, to the latter particular. It presents nothing especially novel or striking. As the *résumé* which Dr. N. presents of the treatment may be interesting to the majority of our readers we present it entire, as follows:—

"Although a prolonged practical observation has induced me forcibly to expatiate upon the advantages of a free employment of chloroform in pertussis, still I do not lay down, as a rule, the arbitrary administration of this agent to the exclusion of all others. Hooping-cough presents no special facilities in its treatment, and any one who bases his treatment upon a blind speciality will be disappointed over and over again. In all diseases we must modify our course by the special features of each case, and this rule applies to hooping-cough as well as to other complaints. In chloroform we have a remedy that either at once prevents the paroxysm, or greatly lessens its severity, frequency, and duration. But, nevertheless, an indiscriminate prejudice in its favour, to the entire exclusion of all other therapeutic agents, would be injudicious. By the employment of chloroform, belladonna, chlorodyne, and prussic acid—but more

especially the first two—pertussis will always yield, and by the rapidity of cure the numerous and fatal complications will be prevented. Of course the bowels must be well looked to, and the diet properly regulated. The food should not be solid—a hearty meal may immediately bring on a severe paroxysm or induce a relapse. Thick farinaceous or thickened animal broths will be found to be of the easiest assimilation. Ventilation, good air, and gentle exercise must not be neglected." "When the first and second stages have abated, change of air is beneficial, provided it be a change that removes the patient from a badly-ventilated room in a close and smoky town to the health-giving breezes of an open country. But even this must depend upon the season of the year. I would deprecate the removal of a patient from a warm and well-ventilated room to the piercing winds of March, or the damp, cold, and fog of November. From the setting in of the premonitory stage, the room used by the child should be of a uniform temperature. The patient must be warmly clad, and all hygienic measures strictly and carefully attended to."

We have endeavoured thus to present a fair though concise digest of all the articles in the present volume of *Transactions*, with the exception of two or three which had already appeared in the quarterly summary of this Journal. We regret that we have not been able to notice the very interesting and valuable remarks drawn out from some of the leading Fellows of the London Obstetrical Society by the reading of the several communications which constituted the basis of its transactions for the past year. The additional space required for even a very brief notice of the remarks just referred to would have extended our article far beyond the limits that, with a due regard to the claims of other articles for insertion, could with propriety have been allotted to it.

D. F. C.

ART. XII.—*Leçons Cliniques sur les Maladies de l'Oreille, ou Thérapeutique des Maladies Aigües et Chroniques de l'Appareil Auditif.* Par le Docteur TRIQUET, Médecin et Chirurgien du Dispensaire pour les Maladies de l'Oreille, Membre Fondateur de la Société de Biologie, &c. &c. Avec figures. 8vo. pp. 250. F. Savy, Paris, 1863.

Clinical Lectures on Diseases of the Ear, or Therapeutics of Acute and Chronic Diseases of the Auditory Apparatus. By Doctor TRIQUET, Physician and Surgeon to the Dispensary for Diseases of the Ear, &c. &c. With illustrations. 8vo. pp. 250. F. Savy, Paris, 1863.

THE volume is dedicated to Professor Armand Trousseau, who says that the author can write none other than a good book.

The first chapter is on catheterism of the Eustachian tubes. The author directs that the catheter or sound, being seized with its concavity turned upwards and outwards, the back or convexity resting against the partition and the point engaging deeply beneath the inferior turbinate bone, is to be pushed directly into the inferior meatus, where it finds a natural groove, and is to be conducted gently and slowly, without effort or violence, until it reaches the posterior extremity of the inferior meatus, where the instrument naturally engages in the opening of the Eustachian tube.

The author describes, with aid of a wooden, a lamp, to which is attached a reflector, for the purpose of illuminating the external auditory meatus. In examining the external auditory canal he prefers the light of this lamp, in a dark room, assisted by an ear-speculum and hand-lens, to sunlight.

In the second chapter the author draws a parallel between diseases of the eye and diseases of the ear which is somewhat fanciful, and in the third claims that there is a close analogy between curing deafness by catheterism of the Eustachian tubes and the cure of cataract by the operation of extraction.

The anatomical or objective symptoms or signs of diseases of the ear are those which are revealed to the eye. They are primitive, secondary, or tertiary.

The physiological or subjective symptoms are not appreciable by the senses of the observer. They can be appreciated only by information derived from the patient himself. Such are pain, heat, erythema, or exaltation of the sensibility of hearing, torpor, and depraved audition or paraesthesia. In certain cases the patient hears singings, buzzings, roarings, and sounds of various kinds.

The most important subjective symptom is deafness in a greater or less degree. Aided by all the means of exploration, examination often discovers nothing; yet the patient declares that he is deaf or hard of hearing.

The primitive anatomical signs are redness, vascularization, and tumefaction.

1. *Redness*.—In acute affections of the ear the whole extent of the auditory canal presents a very manifest redness; its degree is to be estimated by comparing it with the normal colour of the healthy ear. This redness is a common sign of phlegmasia, and cannot exist unless there is at the same time an abnormal development of vessels.

2. *Vascularization or fluxion*.—Exaggerated erythema of the membranes, which in the physiological state is of a pale rose colour, becomes more or less bright red in consequence of inflammation.

3. *Tumefaction*.—When this redness and this more considerable vascularization take place, the membrane seems to be converted into a *rete mirabile*, and the swelling soon becomes manifest to the naked eye. This tumefaction is especially perceptible in the lining of the auditory canal, the parieties of which sometimes come to be almost in contact, and patients fancy there is a foreign body present. This symptom is more marked in acute than in chronic inflammations.

In the chronic state, the redness is very slight; there is less tumefaction; there is still a whitish rose coloration, but less vascularization.

These three primary symptoms constantly exist in all inflammations of the ear and eye.

The secondary symptoms are much more numerous. We find, 1, effusion of blood; 2, suppuration, abscess; 3, adhesions; 4, ulcerations; 5, gangrene; 6, granulations; 7, cicatrization, or the persistence of the preceding alterations.

1. When vascular redness and tumefaction have existed during a certain time, and resolution has not been effected by the efforts of nature or by art, ecchymoses are observed both in the canal and membrana tympani. These ecchymoses appear like flea-bites; sometimes they are more extensive. In certain cases the epidermis seems to be raised, and a slight puncture with a fine needle is followed by a droplet of blood, showing the existence of a subepidermic effusion.

2. If the disease is not checked in its course, suppuration ensues. The red tint of the ecchymoses changes to a dark, or brown, or gray red, and then a purulent spot becomes manifest, and an abscess is developed beneath the epithelium. If art does not arrest the inflammation, this abscess opens in the auditory canal. The danger is increased if the abscess is developed

in the membranous folds which compose the tympanic partition. In such case perforation is inevitable, and, as respects the preservation of the functions of the organ, the consequences are very serious.

3. When the membranes of the auditory canal have suppurated a long time, adhesions may be established between the tympanum and the ossicles, between these and the promontory; and when the ossicles have suffered displacement relatively to each other, very diverse adhesions may be set up; then all is confused; the luxated ossicles, more or less adherent to each other, fall into the drum, and the membrana tympani is shrivelled. When an attentive exploration reveals this condition, the patient may be declared incurable.

4. Ulcerations may exist in the canal in consequence of the preceding alterations. Generally they are easily cured, if they are simple and of small extent. A slight ulceration of the membrana tympani, consequent on simple catarrhal inflammation, will be generally cured without difficulty; supervening on serofulous otitis, it will be more serious. If the ulceration is of the extent of a lentil, all efforts at cure will be unavailing.

5. Gangrene occurs in certain extremely acute affections. A gangrenous spot is established, and a more or less considerable portion of the membrane sphacelates and falls off. This occurs especially in grave fevers, variola, scarlatina, typhoid fever, and rubiola.

Under these circumstances there is loss of substance in the auditory canal and in the membrana tympani. In the canal this accident is not very serious, and in general is quite readily repaired; but if a portion of the membrana tympani is destroyed by a variolous pustule, and the process of ulceration takes place from the interior to the exterior, it is more serious and the ulcer enlarges from day to day: reparation is not possible till the economy takes it up, assisted by the efforts of nature and art. The most serious ulcerations occur in the course of typhoid fever and variola. They occupy the centre of the membrane, at a point corresponding to the handle of the malleus. Sometimes the ossicles are thrown out by suppuration, the stapes alone, owing to its firmer attachments, remaining in place; the liquids escape; all becomes dry in contact with the air; the auditory nerve loses its properties, and incurable deafness is the result.

6. When ulcers and gangrenous lesions tend towards cure, there appear on the surface of the membranes granulations similar to the fleshy buds which are observed in wounds in the process of cicatrization; from these, properly cared for, a cicatrix is still possible.

7. Complete cicatrization is sometimes effected after all these disorders: this occurs more easily in proportion to the smallness of the ulcer, and its vicinity to the circumference of the membrana tympani. If ulceration exceeds the dimensions of a pin-head, cicatrization is rarely obtained.

The tertiary symptoms include opacities of the membrana, which are due to deposits of plasma resulting from inflammation. This is sometimes absorbed.

In sensibility of the membrane is sometimes such that it may be touched with a blunt probe without exciting pain or tickling.

Change in the form of the membrana tympani sometimes occurs. From being concave at the exterior it becomes flat; sometimes it presents two lateral oblique surfaces, and upon the sharp edge which divides them the manubrium is inserted: then we may be certain that ankylosis of the ossicula has taken place. If this is still incomplete, something may be hoped from proper treatment.

There may be, also, in consequence of inflammation, hypertrophy, atrophy, induration, and softening of the tissues of the ear.

In the fifth chapter Dr. Triquet considers otites, or aural inflammations in general. His primary division is into external, internal, and labyrinthic or cerebral otitis.

External otitis embraces, first, puro-mucous otitis, and under this head he names external catarrhal, contagious, consequent on mumps, and blennorrhagic otites; second, serofulous, phlyctenoid (myringitis), and pustular otitis; third, rheumatic; fourth, gouty; fifth, syphilitic; sixth, smokers' and drinkers'; seventh, erysipelatous; eighth, variolous; ninth, morbillous; and, tenth, searlatinious otites.

Internal otites are, first, catarrhal; second, phlegmonous; and, third, periosteal inflammation of the middle ear.

In the treatment of otites the general rules are to ascertain and remove their causes, when possible, and to combat any existing diathesis, such as serofulous, rheumatic, gouty or syphilitic, for as long as influenced by any one of these predisposing causes, treatment will be more or less ineffectual. Local treatment will frequently fail unless constitutional vices are corrected. The ear should be protected from new causes of irritation after the primary have been removed. While the ear is in a state of inflammation, repose of body and mind, and early hours, are important.

Bloodletting by leeches applied in front of the tragus, especially at the commencement of external catarrhal otitis, by cups and by venesection in violent cases is recommended. Dr. Triquet practises scarifications in the auditory canal, and declares that long experience has satisfied him of their utility. One or two long and deep incisions are made with a small tenotomy scarificator, having previously protected the *membrana tympani* against clots of blood being formed upon it by the introduction of a small dossier of cotton. To promote the flow of blood, the incisions are to be gently and frequently wiped with a fragment of sponge held in a small forceps.

In cases where there is an accumulation of pus, mucus, or blood within the drum, the *membrana* may be advantageously punctured with a cataract needle, at the anterior and inferior part about two millimetres from its circumference. When the instrument has penetrated the drum three millimetres at most, it is to be withdrawn a little and the blade turned on its axis, which facilitates the flow of the liquid. The speculum and proper illumination are indispensable to the performance of this operation, which is always followed by immediate relief, and even rapid cure. As soon as the immediate result has been attained, the *membrana* must be put at rest by closing the external meatus with a plug of cotton and a suitable bandage. Experience has shown that wounds of the *membrana* without loss of substance readily cicatrize, provided it is protected from the action of sonorous waves for a few days.

Purgatives, scammony, jalap, calomel with adults, and the golden sulphuret, rhubarb, and calomel with children, are useful when employed early. Emetics are often important, and diaphoretics are advantageously used in special conditions.

In acute and very painful inflammations of the ear mercury has wonderful powers. It should be employed, in general, in fractional doses till the gums are touched, when it is to be suspended, and, if necessary, resumed again.

Arsenical preparations are serviceable when there is a herpetic condition, or strumous diathesis.

Opium in small doses internally, alone or combined with calomel, procures relief; but Dr. Triquet proscribes absolutely the employment of opiate injections into the ear as dangerous, and even fatal in certain well authenticated cases. Opiate fribitions around the ear are of little or no avail; but a mixture of extract of opium and mercurial ointment has prompt effect.

Emollient injections of infusions or decoctions of mallows, linseed, barley, bran, or poppy-heads are useful in all acute inflammations of the external ear and tympanum. A warm injection soothes the inflamed membranes, and as the liquid is evaporated by the excessive heat of the parts, it serves both as emollient and anodyne.

At the close of the acute stage, and during the chronic condition, injections of solutions of tannin, alum, muriate of ammonia, sulphate of copper, corrosive sublimate, administered warm, are very useful. Glycerine is valuable as an excipient in dissolving these articles. The sublimate should be dissolved in distilled water.

Certain unguents or pomatums are employed to meet the same indications. The red precipitate ointment is useful in certain forms of nervous deafness, accompanied by dryness of the meatus and absence of cerumen.

Dr. Triquet proscribes nitrate of silver, because it is painful and sometimes occasions grave symptoms. He places sulphate of zinc in the same category.

Revulsives, which include rubefacients, vesicatorys, pustulents, cauteries, moxas, and seton, are of a certain degree of utility, perhaps, in some cases. It should be remembered, however, that the first cure of a deaf mate by medical treatment was effected by a seton long worn in the nucha.

In treating affections of the ear, regimen, diet, and general hygiene must not be overlooked.

The sixth chapter is devoted to a consideration of external catarrhal, muco-purulent otites, or catarrh of the external ear.

The cutaneous and almost mucous tissue which lines the interior of the auditory canal and covers the external face of the membrana tympani is very often attacked with inflammation such as is observed on other parts of the dermoid and mucous system: muco-purulent, blennorrhagic or catarrhal phlegmasia; sometimes this tissue is the seat of diseases which are clearly of the nature of cutaneous eruptions. The membrane of the auditory canal, both from its nature and its diseases, participates in the affections of those tissues which are in the vicinity of the mucous and cutaneous orifices, the lips, the pharynx, urethra, glans, rectum; these orifices are sometimes the seat of catarrhal phlegmasia, and sometimes of an aphthous, blennorrhagic, herpetie or pustulous inflammation.

The most frequent cause of this otitis is exposure to a cold and humid atmosphere. It may be induced, also, by contagion. The matter of contagion may be derived from the ear of another person, or secreted in another part of the body. Like that of blennorrhagia, it may be transferred to the auditory canal by the fingers, by a part of the clothing, or otherwise.

The symptoms of muco-purulent otitis are analogous to those which characterize inflammations of other mucous membranes. The most striking character is the puriform discharge, which is simply an increase and alteration of the natural secretion of the part. After a short time, the epithelium becomes detached from the canal; a reddish surface appears, which is formed by the papillary body thus denuded, and is simply a consequence of suppurative inflammation.

Catarrhal or muco-purulent otitis is at first limited to the lining membrane of the auditory canal, but in serious cases it invades parts more profoundly situated, especially the membrana tympani, which may be thus rapidly destroyed.

The first stage, which lasts from two days to a week, is the inflammatory. A more or less acute pain is felt in the ear, especially on a level with the tragus, which is increased by pressure on that part, and also by the motion of the jaw in mastication.

The second stage is characterized by a puriform discharge and tumefaction of the lining membrane of the auditory canal.

In the third stage, the inflammation invades the deeper parts and perforates the tympanum. The chief cause of this serious accident must be attributed, without doubt, to a maceration of the tympanum in a quantity of purulent liquid left at the bottom of the ear. This should be removed by frequent injections of tepid and appropriate liquids.

The fourth stage, which may be of indefinite duration, is characterized by swelling and hypertrophy of the lining membrane of the canal, now red, granular, and giving issue to a fetid pus.

If the membrana has been perforated, a frequent complication in strumous and lymphatic children, pus is furnished both from the parietes of the auditory canal and from the mucous membrane of the drum; and after a time, which varies between several weeks and as many months, in a great many cases reddish granulations are seen to project from the drum through the perforation of the membrana tympani, and expand at the bottom of the auditory canal. This is, indeed, the first period which characterizes polypus of the ear.

Dr. Triquet insists that in the general treatment of this and all other affections of the ear, the constitutional diathesis must be carefully studied and have a controlling influence over the therapeutic means employed.

Our author recognizes three varieties of external otitis, which he denominates catarrhal, rheumatismal, and catarrho-rheumatismal otitis. The first is a muco-purulent inflammation of the lining of the auditory canal; the second, an affection of the fibrous tissue of the ear, and particularly of the tympanic partition and articulations of the ossicula; in the third, the dermoid, fibrous, and mucous tissues are simultaneously affected, and the symptoms of each are confounded, still preserving, however, some of their peculiar shades.

In catarrhal otitis, the symptoms are redness, which is diffuse or reticulate, a pungent pain felt at the level of the tragus, and a puriform discharge more or less abundant and fetid. After the inflammation has lasted several days, a whitish, serous, and extremely acrid liquid appears at the orifice of the auditory canal, which soon becomes opaque, thick, and puriform, and so abundant at times that it flows along the neck, and so aerid that in some cases its track is marked by a red, ulcerous furrow in the skin.

Patients often complain of a sensation of pricking, or irritation, or tension analogous to that which the presence of a foreign body would produce. Dr. Triquet has been frequently called to remove a foreign body from the ear, where he only found external otitis.

The illusive sensation of a foreign body is due to the swelling of the lining of the auditory canal, in consequence of which the opposite parietes come in contact, and then the patient believes there is something in his ear.

A physician, summoned to such a patient, often feels it is necessary to search for the foreign body, and his efforts are generally productive of much mischief.

Atmospheric changes, and exposure to cold and humidity, especially to a current of air, are the chief causes of catarrhal otitis. Men are more liable to it than women. A relapse is frequent.

Dr. Triquet has no doubt that, when the discharge is manifestly puriform, it will communicate the disease if in any mode applied to the ear of another person, and the affection thus communicated will be more violent than the otitis from which it was derived. He has known many instances where the disease in one person, arising from atmospheric influences, was communicated to several members of his family without its production being explicable except by contact.

If the pain is violent on a level with the tragus, the local treatment consists in the application of leeches, followed by emollient cataplasms. The ear is to be cleansed three or four times a day with a weak infusion of black tea. After the pain is calmed, if the discharge persists, inject a solution of sulphate of copper, one part to one hundred of rose-water and thirty of honey. If this is not readily tolerated, substitute simple injections of a tepid infusion of elder, or of tar-water; and next resort to a weak solution of acetate of lead. In the chronic condition, when the discharge has lost its fetid odour and green colour, and become of a whitish-yellow, a solution of tannic acid in rose-water may be injected three times a day, for several days, and alternated for a like period with a solution of alum in water twice daily. Both should be made tepid in a water bath before injecting.

The general treatment, in adults, when there is pain, is to be commenced with calomel, thirty centigrammes of which, mixed with six grammes of powdered sugar, are divided into twelve powders, one of which is to be administered every hour. In cases of children, Dr. Triquet gives the following: Calomel 0.10 centigramme; golden sulphur 0.20 centigramme; powdered sugar 6 grammes. Mix, and divide in ten powders: one every hour. If the pain and swelling persist, continue the calomel until the gums are touched and the breath becomes mercurial.

During the whole treatment, the membrana tympani and Eustachian tube are to be frequently examined, in order that obstructions from mucus, &c., in the organ may be promptly removed.

The seventh chapter is devoted to the consideration of serofulous disease of the membrana tympani. Cutaneous and eruptive diseases of the membrane are very common affections, are imperfectly studied, and badly treated. They alone cause most of the deafness of infancy as well as of adult age. The epithelial layer of the membrana tympani is often affected in herpes, leprosy vulgaris, and in the progress of certain syphilitic manifestations.

This affection is often the first manifestation of a serofulous condition of the constitution; when neglected or badly treated, it becomes a cause of permanent abatement or even entire loss of hearing. It rarely attacks infants at the breast, but ordinarily is met with from the period of weaning until about the eighth year.

During the first period, or at the commencement of the disease, the redness of the membrana tympani is very slight, of the hue of carmine lake, and produced by very small vessels arranged like radii around the membrane; while, at the same time, may be observed other vessels more or less numerous, which may be followed to the central portion of the surface of the membrane. In some cases, no vessel is perceived to be enlarged, so that the disease in the beginning is announced by pain, and intolerance of

sharp or even grave sounds, rather than by the anatomical signs of inflammation. Most generally, however, three or four dilated vessels may be discovered going from the circumference towards the centre of the membrane, or winding along its border, evidently superficial, forming a slight elevation beneath the epithelium, which is visible by the aid of a magnifier and reflector. But in certain highly lymphatic subjects the whole surface of the tympanum is covered with tortuous vessels, from which circumstance Dr. Triquet claims to have bestowed on this symptom of phlyctenoid otitis the term *pannus* of the tympanum. This condition is evidently a result of simple increased vascularity.

This disease of the membrana tympani is eruptive. It affects at once and especially the epidermic layer which is continuous from the skin of the external auditory canal; but one of the most remarkable symptoms is the existence of one or several phlyctenulae or small papule on the surface of the partition. In many cases, a single little elevated point, of an opaque white colour, near the centre of the tympanum in the vicinity of the insertion of the malleus is all that can be seen; in other cases there are numerous phlyctenulae (*tanquam stellæ*), on the circumference and at the centre; they are most often at the circumference where the skin of the auditory canal is manifestly continuous with the membrana tympani; their size is variable with the part attacked; thus they are more voluminous on the border of the membrane, smaller at its centre, near the handle of the malleus; but, although smaller in this spot they are more dangerous there, because at this point their ulceration is almost inevitable, involving a perforation of a greater or less extent and the fall or luxation of the handle of the malleus.

Phlyctenæ may, however, be absorbed even when at the centre; at this point they generally leave a little spot. At other times the white spot is irregularly spread, red vessels of considerable size run to it, and there is daily added to it a new deposit of plastic lymph which forms a true *vascular* spot. When this exists, particularly if on a level with the handle of the malleus, the patient will suffer from painful singing in the ear.

It often happens also that the phlyctenæ suppurate, become ulcers, sometimes embracing only the epithelium for a considerable extent, but more frequently they are deep and funnel shaped. At such time a perforation of the tympanum is also inevitable, and as it cannot take place without involving a loss of substance to a greater or less extent, the patient has a chance of suffering always from deafness and a chronic catarrh of the middle ear. In many, this serious accident is attributable to negligence or to badly directed treatment.

As soon almost as there is perforation there is a remission in the symptoms.

When several phlyctenæ exist at the same time on the membrana tympani they sometimes unite before opening, and there follows a considerable hole through the partition, and sometimes the destruction is speedily completed.

In the midst of these serious disorders, the ossicles being no longer sustained by the more or less destroyed membrana tympani, fall, first the malleus, then the incus; suppuration or mucosities bear them outward, and they are usually found some morning on the pillow or on the dressings.

The stapes alone remains in place, strongly adherent to its fenestra, thus opposing the flow of the liquor of Cottunius and preserving the last and most important vestiges of the function of the organ. The patient will be hard of hearing, but not totally deaf; art and assiduous care may ameliorate his condition.

The discharge which appears with the phlyctænæ once established is abundant, greenish, fetid, and is rebellious to treatment. Most success has followed an active and persevering general medication.

Persons affected with myringitis serulosa are very intolerant of sound, but become insensible to it where pannus tympani exists. At the commencement of this disease the pain is acute at the bottom of the auditory canal and at the upper part of the helix. Examination at this stage reveals very slight redness of the membrana; indeed its surface is often sound, or exhibits only a single point of opacity with a small number of vessels grouped around it. In many cases intolerance of sound and pain are the only symptoms. As soon as a pannus appears or a perforation is made, the pain, singing, and intolerance of noise diminish or disappear, at least for a time; but the severity of these symptoms may be brought back by exposure, change of temperature, loud noise, &c. In the acute stage there is acceleration of the pulse, thirst, loss of appetite, constipation, &c.

Strumous diathesis is the remote cause of this affection, and is made operative by inappropriate regimen, dearth of amusements, defective and deficient air, exposure to the sun, excessive clothing. There are almost as many rich as poor people attacked by this disease of the membrana tympani. The chief exciting cause is exposure to cold, especially to cold, humid air. It may be determined also by dentition, measles, scarlatina, variola, and traumatic lesions.

The disease is difficult to control, and therefore the prognosis should be cautiously formed. Relapses are frequent.

When perforation has been closed up, there are formed at those points white spots: in such cases the sense of hearing is rarely restored to its normal condition; not that the thickening of the membrane itself arrests the sonorous waves, but on account of complications in the drum and the ossicles particularly.

In the chronic stage artificial perforation of the membrana, which has been proposed and practised for the cure of deafness, is illusory under such circumstances.

The application of leeches in front of the ear, a little below the tragus, sometimes quickly calms the pain. Emollient cataplasms are to follow the leeches; but whenever employed, the auditory canal should be gently filled with cotton prior to their application to prevent the blood from entering it, because after coagulation it may be as irritating as any other foreign substance.

Emetics, purgatives, sudorifics, are sometimes useful, but the general treatment must be always regulated by the circumstances of the case, never forgetting the diathesis.

The tympanum is to be kept at rest, defended from the action of sonorous waves, which may be effected by closing the meatus with a pellet of cotton. Emollient and slightly astringent instillations are very efficacious; as decoction of poppies, a weak solution of acetate of ammonia, rose-water with a slight addition of "nitric alcohol," or a solution of sulphate of copper, one part to one hundred of water, &c. They should be always employed tepid.

Nitrate of silver in every form is proscribed.

Vesicatories are of little use; but applications of croton oil, and tartar emetic ointment behind the ear, are efficacious. Dr. Triquet has the same opinion of the seton and of the cautery to the nucha.

When perforation has occurred, the ulcer must be touched every two or three days with a pencil of sulphate of copper cut to a fine point. If the

perforation does not exceed the dimensions of a small pin-head, we may hope to see it cicatrize; but if it is more extensive, especially if a fourth or a third part of the membrana tympani is destroyed, all hope of cure is deceptive.

Chapter VIII. treats of rheumatic otitis, which has its seat in the membrana tympani, the articulations of the ossicula and in the fibrous and periosteal tissues of the ear. At first there is no perceptible alteration in the auditory canal, but redness of the membrana is very manifest. It is formed by vascular and tortuous lines which, extending from the circumference towards the centre, converge about the manubrium of the malleus. Their flexuosity, frequent anastomoses, and union at a common point are fixed and well-marked characteristics. The frequent and insupportable singings which torment the patient are attributable to these enlarged vessels. The pain is deep seated, pungent, and is always felt in other parts, as the temple, occiput, on the middle of the cranium, rarely on the forehead, but especially in the lower jaw, more particularly in its articulation. The pain is more violent at night than during the day. In serious cases the affection is accompanied by symptomatic fever. Dr. Triquet relies upon general treatment chiefly, resorting to calomel and opium, purgatives, &c.

Chapter IX. is devoted to gouty, and Chapter X. to syphilitic otitis.

Dr. Triquet, Chapter XI., speaks of an otitis which is peculiar to consumers of tobacco and aleoholic drinks. The patient long accustomed to an immoderate use of tobacco and spirituous potations under whatever form ingested, as a general rule, suddenly and during the night experiences in both ears a hissing or blowing, which is intermittent and comparable to metallic tinkling or ringing.

This morbid noise diminishes during the day, augments after meals, especially after the evening meal, and continues until morning without interruption; at the same time the slightest sounds are painful to the ear. Conversation in a moderate tone is very fatiguing, and the patient frequently stops his ears with his fingers or with cotton. This condition lasts several days or weeks, but rarely beyond two months, and then the second stage takes place.

The second stage generally commences by a sense of seeming amelioration at which the patient rejoices; the ringings diminish in a sensible manner, or even disappear entirely; intolerance of noise and sharp sounds ceases, to give place to an opposite condition; he seeks noise, boisterous conversation, and complains that people speak too low; this deceitful calm lasts but a little time, and the last phase of the malady appears without much delay and sometimes suddenly. In the short space of one night the patient becomes completely deaf.

The third, or paralytic, is the longest and most cruel of the three stages; for, with the exception of some fortunate cases, in which art has timely interfered to procure a certain degree of amelioration which may be temporary or durable, deafness persists indefinitely in spite of all remedial means. The most prominent feature of this third stage of the tobacco consumers' otitis is the more or less perfect abolition of the sense of hearing.

As both ears are commonly affected at the same time, deafness is at times complete, and both auditory nerves are attacked with paralysis to the same degree and nearly at the same time. It is rare, however, that one ear is not less affected than the other, which may be readily ascertained by passing a tuning-fork over the cranium, or simply by a watch; but although the lesion of one auditory nerve may seem to be less profound

than of the other, the affection on that account is not less serious on one side than on the other; for, even if the patient can still perceive the ticking of a large watch applied against the ear, or a tuning-fork pressed against the temple, conversation is nevertheless impossible; he is totally incapable of hearing an articulate sound.

This affection is invariably caused by the morbid condition of the constitution from the long-continued use of deleterious substances, particularly of tobacco and alcohol, under whatever form they may be introduced into the system.

The membranes of the ear present no apparent or real lesion; but on examination of the pharynx the tonsils are found to be small; there is a violet redness of the isthmus faecium, and an innumerable quantity of small, red, granular spots, as if incrusted upon the mucous tissue, impart to the membrane the characteristic aspect of shagreen. The nasal fossae present the same appearance throughout. If the surgeon applies his own ear to that of the patient while the latter makes a strong expiration with both his mouth and nose closed, he will hear the column of air enter the drum without giving rise to mucous sound of cracklings; but the singing appears for the first time, or instantly increases, and this augmentation of morbid sound will thus continue for hours, or days, or until the case is cured, or lapses into the paralytic stage.

No obstruction can be detected in the Eustachian tube.

The treatment in the beginning consists in the application of cups to the mastoid apophyses, leeches to the anns, and in the use of drastic purgatives, alteratives, &c. Locally, emollient fumigations, to which acetic acid or acetate of ammonia has been added, are useful only in the first stage. In the second as well as in the third stage, electricity, whenever employed, has always proved frightfully injurious and hastened the accession of paralysis of the auditory nerve and irremedial deafness. But injections with strychnia, especially with veratria, have procured unlooked-for results.

CASE. *Smokers' Otitis*.—A wealthy foreigner, twenty-five years of age, greatly addicted to the use of alcohol and tobacco—he smoked daily twenty-five cigars at twenty-five centimes each—consulted us about a deafness, already very decided, which had reached the second stage above described.

He consented, although very reluctantly, to renounce the use of tobacco and alcoholies. Daily fumigations into the ear; cups were applied four times to the mastoid apophyses. Next, iron in conjunction with bitters and sulphate of quinia, and, finally, five injections with a weak solution of strychnia at intervals of three days, completed the cure.

Labyrinthic otitis in its relations with the vertigo and buzzings of the ear which accompany it, is the subject of Chapter XII. The author quotes certain passages from a memoir on the properties and functions of the nervous system, which was presented to the Academy of Sciences by M. Flourens in 1822, showing that the cerebrum is the organ of the intellectual faculties and the cerebellum of the motor powers of the animal, and that they are mutually independent.

A young woman died after suffering some days from pain in the head, vertigo, and insupportable buzzing of the ear. At the autopsy, the brain was found to be perfectly healthy, but, as in other analogous cases reported by Saissy and Dr. Triquet, the semicircular canals contained, instead of the liquor Cœlumii, a reddish plastic lymph of recent formation, and an inflammatory thickening of the nervous membrane which lines the different cavities of the internal ear.

This patient, during her menstrual flow, had been exposed at night to severe cold while riding in an uncovered vehicle. The next day vertiginous symptoms with deafness and buzzing appeared, and continued until death supervened.

If, on examination, the external and middle ear, the Eustachian tube and pharynx are found in a normal condition, and if there are no indications of gastric vertigo, cerebral congestion, or chloro-anæmia, the vertiginous symptoms, of which the patient complains, may be referred to a lesion of the labyrinth.

The prognosis is very serious, for, if the patient does not succumb during the acute stage, he is the victim in the chronic state to an obstinate and often irremediable deafness.

The treatment, in the acute stage, is by general bleeding, repeated according to the strength of the patient; scarified cups to the mastoid apophyses; leeches to the anus in men, or to the vulva or upper part of the thighs in women; ice to the head, fractional doses of calomel and drastic purgatives.

Sassis advises injections of tepid milk through the Eustachian tube into the middle ear to form there a kind of liquid cataplasma. Dr. Triquet has found fumigations with acetic acid diluted with water made to penetrate by the same way with the assistance of special apparatus, very serviceable, especially in combating the obstinate deafness of the chronic stage.

Anchylosis of the bones of the ear is the subject of Chapter XIII.

In complete ankylosis neither the air douche nor expiration produces any cracking. The ossicles are perfectly stiff, and their ossified joints remain immovable. Pain is almost always absent, buzzing, which is common to affections of the ear, is rarely wanting. In all cases the sense of hearing is very torpid. If, on gently disturbing the membrana at the point which corresponds to the malleus with a blunt probe, the patient has a fugitive sensation, which gives him a feeble and positive perception of some distant sound, the ankylosis is incomplete, and all hope is not lost.

Catarrh of the middle ear, in the chronic state, is distinguished from ankylosis, because in the former the membrana tympani preserves its concave form and loses its transparency. There are no crackings in the ear. They are replaced by a mucous sound.

Nervous deafness is easily distinguished by the complete absence of wax from the auditory canal, by the perfect transparency of the tympanic membrane, the integrity of its form and situation as well as of the ossicles, by the absence of mucous sounds and of crackings particularly. Besides, the erethism and buzzing are considerable, and the latter are most frequently isochronous with arterial pulsations. These differences, clearly ascertained, constitute the elements of differential diagnosis.

The local treatment recommended consists in fumigations with acetic acid or spiritus mindererus, at first to the external ear, and subsequently through the Eustachian tube into the drum. If there be inflammation of the drum still existing, cups and blisters to the mastoid, and where there are persistent granulations of the pharynx, cauterizations of the part cannot be too strongly advised. Dr. Triquet has derived advantage from the employment of liquid and gaseous sulphurous douches, as well as from injections of strychnia and veratria into the middle ear. Calomel and opium, iodide of potassium, arseniate of iron or soda internally, are useful accordingly as gout, rheumatism, or syphilis may be suspected to be associated with the cause of the ankylosis.

Chapter XIV. treats of the difficulties and accidents of catheterism of the Eustachian tubes. His remarks on this subject were given in our number for January, 1863, p. 224 *et seq.*

Dr. Triquet states, in Chapter XV., on the different substances which may be injected into the middle ear, that lesions of the cavity of the tympanum are the most frequent cause of nervous deafness, and that, in a certain proportion, cases may be remedied by medicated injections through the Eustachian tubes. In cases in which there is reason to believe that the mucous membrane lining the tubes or drum is in a mammillated condition, and especially in subjects whose deafness is consecutive upon typhoid fever, he injects a solution of caustic potassa into the middle ear. A few drops of a concentrated solution of caustic potassa are added to water until the mixture applied to the tongue shall produce a slight tickling. Some fifteen drops of this diluted solution are drawn into a syringe or pipette; then, having instilled into the catheter previously inserted into the tube, as many drops as may be considered proper, they are pushed into the middle ear by the assistance of a caoutchouc bellows or bag. In the beginning from four to five drops are injected every two days, and a little later, from eight to ten. When the tube and drum are filled with mucous sounds during the insufflation he stops. When the operation has succeeded well the patient experiences a sense of heat, with tingling in the ear. The pain is slight, and soon disappears; sometimes, however, it lasts till evening. If the pain is too sharp, it is prudent to operate only on one side the first day. If the tubes from the first fill with mucous sounds during efforts at expiration or during insufflation, it is best, during eight days, to practise injections of air, either dry or rendered stimulating by the addition of some drops of ether or chloroform. From one to seven potash injections usually produce a satisfactory result, but there is no objection to exceeding this number.

Douches of the vapour of ether or of chloroform may be utilized in cases in which essential paralysis of the auditory nerve is suspected. The vapour is administered by the aid of a gum-elastic bag, armed with a stop-cock, into which some grammes of acetic ether or chloroform are poured—commencing with one gramme, increasing up to four or five at different times. The warmth of the hand is sufficient to volatilize the liquid; then attaching to the catheter previously introduced, the stopcock being open, a simple pressure of the fingers is sufficient to drive the vapour into the cavity of the ear.

If injections of ether or chloroform do not succeed, strychnia, nux vomica, veratria, &c., may be tried; for, in rebellious or desperate cases, all means which are not injurious are legitimate. The following formulæ for injections of strychnia are given:—

No. 1.—Strychnia 0.20 centigramme; ether. acetic. 16 grammes; aq. destillatae 16 grammes.—M.

No. 2.—Strychnie 0.30 centigramme; acid. acetic. 7 guttæ; aq. des-tillatae 16 grammes.—M.

Of these perfectly transparent solutions three or four drops are injected into each tube. Employing the first formula, $\frac{1}{35}$ of a grain is injected at a sitting into each tube, or $\frac{1}{15}$ for the two ears; and of the second formula, $\frac{1}{2}$ of a grain at a sitting is injected into each ear, or $\frac{1}{6}$ for both ears. Dr. Triquet says the effect of this medication has been remarkably happy once in twelve times.

With the same view he has employed injections of the alcoholie tincture and extract of nux vomica, but with no other result than the fact that they gave rise to general symptoms no more than strychnia.

Injections of Veratria. No. 1.—Water 20 parts; veratria 1 part; acetic acid 1 part. This solution has never been employed pure, but diluted with four, or five, or six times its volume of water. It is a very painful topical irritant.

No. 2.—Alcohol 12 parts; veratria 1 part. This solution is diluted with from two to twenty-four times its volume of water.

Veratria being an extremely irritating substance, it is necessary to commence with very dilute solutions. The weakest dose employed by Dr. Triquet is $\frac{1}{4}$ of a grain in two drops of water injected into the tube. This dose produces a moderate sensation. There is, however, a little irritation in the ear which receives the injection. The strongest dose which has been injected is $\frac{1}{2}$ of a grain in three drops of alcoholized water. The effect was very violent, and the pain in the ear tearing. Pure water was immediately injected to assuage the pain; but there was, after the seventh insufflation of the solution, an amelioration sufficient to authorize new applications of the remedy.

Dr. Triquet is of opinion that it is a grave error to suppose that all kinds of deafness can be cured by injections of atmospheric air.

Herpold, of Copenhagen, who first employed this therapeutic means towards the close of the last century, confined it to cases of torpidity of the tube or drum, caused by the presence of thick viscid, but still liquid mucosities. When this mucus, which has become hard, dry, and adherent, obstructs the tube and causes deafness, we must have recourse to fumigations, and to injections of tepid water, such as Guyot successfully tried on himself, for the first time, in 1724.

But in cases of chronic catarrh, with thickening of the membranes, medicated injections are to be preferred, such as the vapour of tar, gum benjamin, aloes, juniper, myrtle; injections of dilute solutions of potassa, strychnia, nux vomica, &c., all of which are successful in the particular cases to which they are adapted.

In the sixteenth chapter the author treats of "gourmes"—the *anchor mucifluus* of Alibert, or *porrijo larvalis* of Willan—and puriform discharge from the ears.

Polyposis of the ear is the subject of Chapter XVII. True polyps of the ear are seated in the drum, and have their origin or point of attachment on the petrous bone. In form, they sometimes resemble a split pea, and sometimes they entirely fill the auditory canal and project externally; but sometimes, too, they are so small and concealed at the bottom of the meatus that they escape sight. A more or less considerable discharge often accompanies, and always precedes their presence.

Dr. Triquet, after the removal of the tumour, applies liquid chloride of zinc as the most suitable caustic.

Polyposis of the ear, he says, differs from polyposis of other parts of the economy, and especially from that which occurs in the nostrils.

Polyposis of the ear arise and are developed on the mucous membrane of the drum and on the petrous bone, in consequence of acute or chronic fluxes, which have destroyed or torn the membrana tympani. Dr. Triquet has never met a case in which this membrane was not either partially or wholly absent.

In the treatment, he prescribes the liquid chloride of zinc, which, acting instantly under the eye of the surgeon, enables him to limit its action at will. He disconntenances the use of Canquoin's paste, because he believes it is dangerous to leave a fragment of it at the bottom of the ear during

twenty-four hours, since its destructive action may exceed the proposed limits. He states that he has not failed in a single one of more than sixty cases, in which he employed the liquid chloride of zinc.

Hemorrhage from the ear in hooping-cough is the subject of Chapter XVIII. There is always rupture of the membrana tympani in these cases, which are to be treated with cups or leeches to the mastoid region; calomel or scammony in appropriate doses, to act as derivative or antiphlogistic agents. The tympanum is to be set at rest, by plugging with cotton, and protecting the patient from noises. Cicatrization of the torn membrane may be favoured by the application, with a pencil, once or twice daily, of a mixture of ten centigrammes of tannin with ten grammes of glycerin, or a morsel of goldbeater's skin soaked in a drop of collodion, to the wounded membrane.

Chapter XIX. is devoted to the consideration of the advantages of cold water externally and of wine internally, in the treatment of cancer of the ear.

Ether in the treatment of deafness is the subject of the next chapter. Dr. Triquet tried this remedy in 110 cases, and was convinced not only of its little efficacy, but that it is dangerous. In twenty cases, the pain and redness were so great that a resort to antiphlogistic remedies was necessary for their relief.

Chapter XXI. treats of a hitherto undescribed variety of singing in the ear, which is not due to the condition of the brain or acoustic nerve, nor to the presence of ceruminous concretions in the auditory canal, obstructions of the Eustachian tube, nor to a collection of mucus, blood, or pus in the drum. In certain cases of this distressing affection, careful inspection of the membrana tympani shows simply a vascular redness of the manubrium and of the membrane surrounding it. At the same point, the membrane is agitated by minute intermittent oscillations, which are isochronous with the pulse.

Serious lesions of the drum and labyrinth may exist, giving rise to deafness, intolerable buzzings, &c., and often escape scrutiny, while the membrana tympani is entire. These lesions consist in reddish vascular thickenings, comparable in all respects, as the microscope shows, to the mammillated or papillated hypertrophies pulsating as above stated.

In cases where investigation by vision is impossible, Dr. Triquet thinks that the redness and vascularization about the manubrium of the malleus is pathognomonic. Whenever this sign is clearly ascertained, it may be asserted that the patient is tormented with buzzing, and that the cause of it is an abnormal development of the capillary plexus, consequent upon inflammation in different parts of the acoustic apparatus.

Dr. Triquet, in such cases, applies along the manubrium, by instillation, some drops of perchloride of iron, by means of a capillary tube or the syringe of Pravaz. He suggests compression, and even ligation, of the small arterial vessels which penetrate the drum and labyrinth.

Chapter XXII. treats of the facial paralysis which accompanies chronic purulent discharges from the ear; and Chapter XXIII., which closes the volume, embraces a report of several cases.

The preceding summary of Dr. Triquet's work indicates its scope and nature. He very frequently refers to his own *Practical Treatise on Diseases of the Ear*, to which this volume is made to serve as a complement and commentary in some respects. Nevertheless, it may be regarded in itself as a useful addition to the number of instructive books on aural diseases.

W. S. W. R.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Transactions of American State Medical Societies.*

1. *Medical Communications with the Proceedings of the Seventy-second Annual Convention of the Connecticut Medical Society, held in New Haven, May 25th and 26th, 1864.* New Haven, 1864. 8vo, pp. 100.
2. *Communications of the Rhode Island Medical Society* for the years 1863-4. Providence, 1864. 8vo, pp. 42.

1. "INERT Practice in Disease" is the theme of the annual address of the President, Dr. E. K. HUNT, of New Haven. By inert practice, Dr. H. does not mean the use of medicinal agents in infinitesimal doses, nor of substances known to be destitute of any remedial powers, but rather the employment in the case of disease of the active and approved articles of the *materia medica*, in such quantities and at such intervals, as is shown by the experience of the vast majority of the intelligent, experienced, and unprejudiced members of the profession, must prevent their exerting any influence in staying the progress, or in any manner changing the character of morbid action in any of its stages.

This purely expectant or "do nothing" practice is based upon the supposition that all diseases have a definite and prescribed course, which cannot be checked or favourably modified by any of our therapeutic agents, and which, when completed, is followed by a cessation of all morbid phenomena, without the intervention of art. The supposition that diseases are in any correct sense self-limited, or that they are invariably or very generally conducted by the efforts of nature alone to a favourable termination, is shown to be false by every day's experience. When allowed to run an uncontrolled course, the more severe maladies, at least, are too often found to terminate in death, or to inflict an irreparable injury upon some important organ by which its functions are more or less impaired, and the general tone of the system in proportion permanently reduced.

That diseases exhibit what, with propriety, may be termed a regular course, and not unfrequently manifest a spontaneous tendency to a favourable solution is not to be denied. Hence, every judicious physician must, in the faithful performance of his duties, become, to some extent, the minister of nature. He will neither attempt nor desire to interfere with the regular progress or natural sequence of morbid phenomena, should he have failed in his effort to cut them short at their onset: he will, nevertheless, watch assiduously every case of disease placed under his care, and promptly have recourse to such measures as his experience approves to control any irregular, or undue action that may present, itself; and by guarding threatened organs from being drawn into diseased action or overwhelmed by undue determinations to them of blood, in this manner circumscribe morbid action within safe limits, reduce its violence, shorten its duration, and conduct it with greater certainty to a favourable termination. The field for active effort is very broad and extensive, and the judicious and skilful practitioner will find his services rewarded, when, by an intelligent exercise of his office, he has relieved pain; equalized the circulation and reduced it within its normal rhythm; regulated the secretions and excretions; removed and guarded against sources of irritation, and promoted the natural effort to throw off the matières morbi when any such exist, by finding the sufferings of his patient shortened, the integrity of all his organs secured, and his prompt restoration to health secured.

The views presented by Dr. Hunt, in the discourse before us, are, throughout, sound in principle, and ably sustained and enforced. Though devoid of novelty, it seems proper, that now, when the "ancient landmarks" in therapeutics, founded

upon the accumulated experience of the able practitioners of all times and countries, are being discarded by many physicians, these views should be reiterated, in order that they may assume their proper position as regulators of a rational and successful medical practice.

The second of the medical communications in the volume under notice, is on Scarlatina, by P. M. Hastings, M. D., of Hartford. The object of the author is to show that, whether we regard the virus of scarlatina as a foreign element circulating with the blood, or as a ferment generated in that fluid, and causing a disturbance in the proportions or vital condition of its constituents, it is the skin which is the principal organ in the elimination of that virus and its products, and that the treatment of scarlatina should be directed chiefly to the early restoration of the suspended functions of that organ.

As this view of the pathology of scarlatina, though mixed up with much that is hypothetical in the exposition given of it by our author, has an unquestionable substratum of truth, a brief sketch of the treatment best adapted, in his opinion, to aid the skin in the performance of its curative office in a disease which has so often baffled the best directed efforts of the most skilful physician, may not be without interest.

The leading indication, according to Dr. Hastings, is to watch carefully, and, if need be, to assist in the prompt and complete exfoliation of the epidermis, and consequent restoration of the normal functions of the skin. After the subsidence of the efflorescence, this indication is to be fulfilled by the use of the warm or vapour bath.

"A few years since," he remarks, "it was the practice to anoint the skin with the rind of bacon. One of the reasons assigned for the benefit derived, was the protection afforded to the surface rendered preternaturally sensitive by its congested condition. I believe, however, that the true explanation is to be found in the circumstance that the oil supplied, in some degree, the absence of the sebaceous secretion. Glycerin is a neater application, and far more effectual in bringing about the desired result. Mixed with Cologne water, in the proportion of one part glycerin to four or five parts of the former, it forms an agreeable wash and allays the troublesome itching so common at this period. It acts, to some extent, as a solvent of the dry epithelial scales, and, followed by friction, promotes their separation. If by these or similar means we succeed in restoring early the functions of the skin, the congestion of the throat or internal organs, so commonly encountered, will be greatly modified if not wholly relieved. Of course the process will produce general exhaustion and require the exhibition of internal stimulants and tonics."

The second indication, according to Dr. H., is to reduce the congested condition of the intestinal mucous membrane.

"Emetics of a mild character were formerly much used for freeing the stomach of its contents and determining the blood to the surface. Of late they are, to a great extent, neglected, and, I think, many times to the serious disadvantage of the patient. A mild cathartic is often advisable; it should generally be saline, as the drain produced by its action serves to relieve the capillaries of their fluid contents. When, as often happens, this congested state of the mucous membrane occurs before the functions of the skin are restored, as indicated by rapid swelling and ulceration of the throat, and engorgement of the lymphatics, we should urge the employment of active means to complete the exfoliation of the epidermis. The third, and last indication, has reference to the condition of the kidneys, which often present serious complications in the latter stages of scarlet fever. When the foregoing indications are not fulfilled before the second or third week of the disease, scanty urine, loaded with epithelial scales, exudative casts of the uriniferous tubes, and albumen present themselves, and we should watch with care the dropsical effusion in the pericardium, peritoneal cavity or cellular tissues, which often proves rapidly and unexpectedly fatal. This effusion, indeed, should be regarded as important in all stages of the disease. When the above described conditions are present, active measures for their removal should at once be employed. Small and frequently repeated doses of eaiomel are especially serviceable. If continued until a slight degree of inflammation of the bowels is produced, followed by mucus and shreddy discharges, by the removal

of the accumulated epithelium, it will prove an efficient means of restoring the mucous surface to its normal condition. During the use of the calomel, tonics and stimulants are generally demanded to sustain the vital powers. At the same time, our attention should be directed to the condition of the skin; the warm or vapour bath and inunction with glycerin, will materially aid in restoring its functions. An increase of sensible perspiration will be followed generally by an improvement in the urinary secretion. Diuretics will now prove of service in establishing the normal condition of the kidneys. Among these, the tincture of the chloride of iron is particularly valuable. I do not regard this class of agencies applicable until the stage of active congestion has passed off."

Although we are not inclined to indorse the foregoing plan of treatment as the one that is the best adapted to scarlatina as it presents itself in different epidemics, or in every case occurring in the same epidemic, we believe, nevertheless, that it presents many therapeutic directions which may with profit be adopted in nearly every case of the disease that we may be called upon to encounter.

The third communication is on the "Water Treatment of Scarlatina, especially by the wet sheet pack," by Dr. R. W. Mathewson, of Durham. As the title imports, the object of this communication is to point out the efficacy of the "wet sheet," applied by packing, in the treatment of scarlet fever. It is a very cautious and candidly written paper. After presenting a view of the large amount of evidence furnished by various imposing authorities in favour of the application of cold, in various ways, to the surface, in scarlatina, Dr. M. proceeds to show the superior efficacy exhibited by the same agent when applied by packing with the wet sheet. He had witnessed its use in twelve cases, and with the most satisfactory results. It seems to him to possess the advantage over the cold lotion and effusion, of securing a more certain and manageable reaction, and, also, by its depurative effects upon the emunctories of the surface. By its repellent effects upon the superficial capillaries, and the consequent reaction, it relieves the congestion of the surface—opens the constricted pores of the skin, and by keeping the cuticle moist, it favours absorption and exhalation, and thus promotes the efforts of the organism to discharge the matières morbi by the emunctories of the skin, thereby removing the source of morbid excitement and local complications.

The effects of the pack in modifying favourably the symptoms of scarlatina have been such as to remind Dr. M. where, in families, some were treated by it and some not, of the effects of vaccination in modifying the character of variola.

The earlier the pack is resorted to the more marked are its effects. It may be used as soon as the heat and dryness of the skin, and the frequency and fulness of the pulse become steadily raised above the normal standard, and with a freedom proportioned to the urgency of these symptoms. Dr. M. has usually applied the wet sheet during the height of the evening exacerbation. He has known the pulse to be reduced by it in frequency twenty to forty beats in a minute, the morbid excitement to be calmed, and quiet sleep induced in from ten to fifteen minutes.

The luxury of the pack is no trifling recommendation. Children have been known to cry for its repetition on a return of fever.

In none of the cases of scarlatina treated by him with the wet sheet, were any sequela observed by Dr. M., although these cases occurred during an epidemic in which complications were frequent.

The subject of the fourth memoir is "Enlargement of the Prostate Gland;" it is by Gordon W. Russell, M.D., of Hartford. Before describing the hypertrophied condition of the prostate body, which is so generally observed in individuals of advanced age as to render it in a good degree an especial disease of old men, Dr. R. presents a very rapid sketch of the chief ailments to which the prostate is liable, as simple inflammation from injury or other cause, malignant disease, calculous depositions in its substance, &c. The account given by Dr. R. of the hypertrophy of the prostate, its symptoms, march, diagnosis, and treatment, though very concise, is, nevertheless, accurate and instructive. It presents, however, nothing new in respect to either the pathology or therapeutics of an ailment which, considering its frequency and the evils it entails

upon the unfortunate patient, has received too little attention from the physician and surgeon.

The fifth memoir is on "Sulphuric Ether in Surgical Operations," by Dr. John E. Blake. The object of the writer would appear to be, chiefly, the mode and extent of exhibition of the ether for the prevention of suffering in surgical operations. The suggestions thrown out are all very good, but are without any particular novelty.

An interesting report is given by Dr. Geo. W. Burke, of Middletown, of a case of "scirrus of the testis."

2. The first of the Rhode Island communications is from Dr. H. E. Tucker. It comprises the history of two *surgical cases*—the one of fracture of the skull, the other of traumatic tetanus.

The fracture of skull occurred in a labourer on the railroad. It was caused by a blow with a billet of wood in the hands of a fellow-workman. The condition of the patient, twenty-four hours after the injury was inflicted, was as follows: Contusion and tumefaction, without much laceration of scalp, over and about the parietal protuberance; occasional convulsive movements of the muscles of the left side of the face, recurring when pressure was made over the seat of injury, thus indicating the existence of fracture. There was no violent reaction, no coma nor other symptom of compression. It was concluded to do nothing more than prescribe a suitable diet and regimen. Three days subsequently, the convulsive movements persisting, it was determined to operate with the view of relieving the brain from any compression under which it might be found to labour. A free crucial incision through the scalp, showed that the skull, to the extent of a twenty-five cent piece, was depressed to the depth of over an inch, the depressed portion of bone being somewhat comminuted, but not sufficiently so as allow of its being removed by the forceps. The trephine, therefore, was applied above the fracture, and the depressed portion of skull raised by the elevator. The dura mater was perforated, and the thumb could be passed down to the first joint into a cavity in the cerebrum. For forty-eight hours succeeding the operation there occurred occasional attacks of severe convulsions. From this time there was a rapid improvement. The patient was confined very little to bed—was cheerful, had a good appetite, and exhibited no impairment of intellect. The wound of the scalp, one month after the operation, had in a great measure cicatrized, and all about the seat of injury had a favourable appearance. The probability, according to Dr. T., is that the patient will become epileptic.

"I have been thus particular," says Dr. T., "in giving an account of this case, from its furnishing a pretty good commentary on the doctrine I ventured, with some hesitation, to announce a year ago, namely, that in severe injuries of the head, perforation of the dura mater improves the prospect of relief and final recovery. I gave two cases, in which the degree of injury was about equal to that in the present one. The case in which the dura mater was perforated recovered; in the other, in which it was not, no reaction or consciousness occurred. I should not feel justified in opening the dura mater under such circumstances, but think the question of its propriety worthy of discussion."

In the latter part of September, 1862, Dr. T. saw, by the invitation of Dr. West, of Tiverton, a labourer on the railroad affected with tetanus. He was an athletic Irishman, who had been bitten by a dog. There was no peculiarity about the case, save that the patient was in a fair way to recover, which he finally did. His treatment was almost exclusively by opiates. The case occurred in a rather populous rural locality where, within the radius of a mile, five other cases of tetanus had occurred within twenty years.

The second communication is from the same gentleman, Dr. Turner, and describes an epidemic of "*typhoid dysentery*," which prevailed in New Port, R. I., during the months of August, September, and October, 1863. The rareness with which the prevalence of any severe epidemic is observed in that city has given to the one described by Dr. T. an unusual degree of interest.

The epidemic in its severest and most fatal form was confined to certain limited and well defined localities. In some streets scarcely a family escaped,

while in others, not far distant, scarcely a case occurred. At the Asylum, Coaster's Harbor, in a community of about sixty persons, from the 29th of August to the 19th of October, seven deaths from it occurred, or over eleven per cent. of the entire population. Of these deaths three were in patients less than two years of age, and the other four in those of five years and upwards—the elder being all chronic invalids. The average duration of sickness was eleven days; in one it lasted twenty-eight days, in another only four days.

The situation of Coaster's Harbor, as regards healthfulness, is unexceptionable—dry, elevated, and airy—many of its inmates, very aged persons, had dwelt there from forty to fifty years.

At Fort Adams, on the opposite side of the harbor to the asylum, and about equally distant from the city, was a garrison of about 150 men, living irregular lives, and indulging in various excesses in their frequent visits to the city. They resided in casemates, twenty-five, or over, sleeping in the same apartment, which, of necessity, was damper and less easily ventilated than would be the case if situated in detached wooden buildings. Among these 150 soldiers there were no deaths, nor a single case of dysentery during the whole autumnal season.

"According to my observation," says Dr. T., "the localities where the epidemic most prevailed were not those where it would have been most expected; a very different quarter of the city, and a very different class of people suffered, from that which suffered from the cholera in 1854. It was not, as with the latter, the poor and foreign population, surrounded by filth and bad drainage, privation and negligence, but the well-to-do people, in the central and well-kept streets, who were the victims. So far as I know, the wharves and poorer streets, which suffered the most from cholera, were unusually free from dysentery."

"The prevailing winds during the summer of 1863, instead of being as usual from the southwest, were from the east; and the weather was damp, and the heat oppressive, to a degree very seldom experienced in New Port. The declivity upon which most of the city is built fronts the west, and of course the southwest winds coming directly from the sea, and generally blowing hard for several hours every day, ventilate the streets and yards very thoroughly; whereas the town is almost entirely sheltered from easterly winds, so much so that during their prevalence the inhabitants are unconscious of any wind at all."

In many cases, in which the symptoms were not very severe, there was a singular persistency in the dysentery, and an obstinate resistance to the effect of remedies.

The average of deaths for August, September, and October, during the years 1861 and 1862, was within a fraction in 13 per month, whereas in 1863 it was 37, being an increase of 200 per cent. The average mortality of New Port, for the whole of the year 1863, vastly exceeded the usual ratio. In the three months during which the dysentery prevailed there was an excess of deaths over those in 1862 of 77, and over those in 1861 of 68; in the whole year the excess was 121 over 1862, and 123 over 1861. The average rate of the two years, 1861-62, was 10 $\frac{1}{2}$ per month, while in 1863 it was precisely double, or 20 $\frac{1}{2}$. While the percentage for the three dysentery months was 200; for the whole year it was 100.

During the months of March, April, and May, 1864, Dr. T. describes what he terms a very remarkable epidemic, which prevailed at Coaster's Harbor, chiefly though not exclusively affecting the pauper inmates. Of these last it destroyed eleven of those who survived the dysentery of the preceding autumn.

The disease is supposed to have originated from the introduction into the asylum of a family of coloured people, who had been living in filth and debauchery, without sufficient food, clothing, or fuel. Three of the family were labouring under typhus fever at the period of their introduction, but ultimately recovered. From the arrival of these persons into the asylum to the latter part of April, the disease attacked a large portion of those exposed to its contagion—Most of them being old or otherwise infirm, succumbed to the attack without the development of very aggravated symptoms; whilst the young and the vigorous generally recovered.

In most cases the disease was marked by a small and feeble pulse, somewhat, but not excessively accelerated; hot and dry skin; scanty and high-coloured

urine; costive bowels; dry tongue without sordes, which were also absent on the teeth and gums. There was in most cases a remarkable absence of grave cerebral symptoms: great depression was the leading characteristic in the generality of severe cases.

The sick in the different parts of the asylum were not separated from the well; and from this circumstance arose doubtless much of the mortality.

There were eleven deaths from the disease at the asylum: no resident of the city was known to have been attacked by it. A lady who came to see her brother, died soon after her return home to Providence, from the disease. It is not known that she communicated it to any one in the latter place.

The remaining communications consist of obituary notices of deceased members of the Society, and a report from a Committee on the Plan of the Rhode Island Hospital. The volume closes with the minutes of the semi-annual meeting of the Society for 1862, the annual and semi-annual meetings of 1863, and the annual meeting of 1864.

D. F. C.

ART. XIV.—*Reports of American Hospitals for the Insane:*—

1. *Of the New Hampshire State Hospital, for the fiscal year 1862-63.*
2. *Of the McLean Asylum, for the year 1863.*
3. *Of the State Hospital, Tanniton, Mass., for the fiscal year 1862-63.*
4. *Of the State Hospital, Northampton, Mass., for the fiscal year 1862-63.*
5. *Of the Retreat, Hartford, Conn., for the fiscal year 1863-64.*
6. *Of the Frankford Asylum, for the fiscal year 1863-64.*
7. *Of the Mt. Hope Institution, for the year 1863.*
8. *Of the Central Ohio Asylum, for the fiscal year 1862-63.*
9. *Of the Wisconsin State Hospital, for the fiscal year 1862-63.*
10. *Of the Kentucky Eastern Asylum, for the fiscal year 1862-63.*
11. *Of the Kentucky Western Asylum, for the fiscal year 1862-63.*
12. *Of the Illinois State Hospital, for the two fiscal years 1860-61 and 1861-62.*
13. *Of the Indiana Hospital, for the two fiscal years 1860-61 and 1861-62.*

1. THE numerical record at the *New Hampshire Asylum for the Insane*, in the course of the fiscal year ending with the close of April, 1863, gives the subjoined results:—

		Men.	Women.	Total.
Patients at the beginning of the year	.	88	100	188
Admitted in course of the year	.	45	56	101
Whole number	.	133	156	289
Discharged, including deaths	.	39	46	85
Remaining at the end of the year	.	94	110	204
Of those discharged, there were cured	.			30
Died	.	7	9	16

"Of the deaths, none have resulted from any disease having its origin during residence in the Asylum, but all have occurred in the progress of those forms of disease, in one stage or another, with which the mental disorder has been associated."

Dr. Bancroft experiences the same difficulty from the premature removal of patients susceptible of cure, or of further improvement, which is so frequently mentioned in the reports from other hospitals.

"Fear of the draft" is alleged as the cause of insanity in two of the patients admitted, and "enlistment of husband" in one.

2. The following numerical statistics are taken from the report for 1863 of the *McLean Asylum*:—

		Men.	Women.	Total.
Patients in hospital, January 1		78	98	176
Admitted in course of the year		51	43	94
Whole number		129	141	270
Discharged, including deaths		39	30	69
Remaining at the end of the year		90	111	201
Of those discharged, there were cured		19	17	36
Died		9	4	13

A considerable part of Dr. Tyler's report is devoted to an exposition of the safeguards, both legal and social, by which the personal rights of the individual are protected from invasion by any attempt unjustly to confine a person in a hospital for the insane. We extract one or two paragraphs, in which we think the doctor takes the right view of the subject:—

"If, under our present laws, and the existing management of our asylums for the insane, there is danger that persons, through the pretext of insanity, may be deprived of their personal liberty and rights, these laws and this management ought to be instantly and rigidly revised and reformed; and I know of no body of men who would step quicker or with more heart to the work than those who are engaged in the supervision and superintendence of these institutions. I would say here, that it seems evident that the real point to be scrutinized is this—the fitness for their position of the men who have these institutions in charge. Are the persons who stand to these institutions in the relation of "board of visitors," "trustees," and superintendents high-minded and conscientious men, sagacious and discreet, of strict integrity, and of kind heart? If not, here the reform should begin, as hereon depends the safety of the community; for if there is a position on the face of the earth for which the indispensable requisite is an unflinching purpose to do right, united to undoubted kindness and benevolence, that position is the guardianship of the insane—of those who cannot rightly and safely use their personal liberty, or think and act wisely for themselves. The relation is similar to and as sacred as that of parent to child, and he who holds it should possess such a head and heart as will always and under all difficulties endeavour to act discreetly, justly, tenderly, and as surely so whether there be a human law to direct him or not."

Further on, after asserting that "the only effectual way to guard against abuse from unjust admission and detention" is to make sure, by the most rigid scrutiny, that the guardians, officers, and attendants of the hospitals are trustworthy persons, the author of the report thus challenges such an investigation: "Let the beginning be made here, with the McLean Asylum; and the more careful and just the examination, the more will it be welcomed, that the public and the anxious friends of patients may no longer be harassed by indefinite rumours and innuendoes, which, though not believed, they have not the means to disprove."

3. The general statistics of the *Massachusetts State Lunatic Hospital*, at Taunton, for the fiscal year ending September 30, 1863, are as follows:—

		Men.	Women.	Total.
Patients at the beginning of the year		206	215	421
Admitted in course of the year		89	107	196
Whole number		295	322	617
Discharged, including deaths		91	124	215
Remaining at the end of the year		204	198	402
Of those discharged, there were cured		32	55	87
Died		15	19	34

Died of phthisis, 11; general paralysis, 6; maniacal exhaustion, 4; marasmus, 3; diarrhoea, 2; fever, 2; apoplexy, chronic mania, dysentery, epilepsy, inanition, and scrofula, 1 each.

"It must be remembered," remarks Dr. Choate, "that of those taken sick among the insane, a much larger proportion die than of those sick with the same diseases among the sane. A healthy mind is a great aid to the restoration of a

sound physical constitution; and when the former is lost, the system easily succumbs to what would, under other circumstances, be a trivial disorder."

The following statistics illustrate the advantage of early treatment: "Seventy-five per cent. of all recoveries that have taken place the last five years have been in cases which had been insane less than three months before admission; 9 per cent. in cases which had been between three and six months insane; and 7 per cent. in cases which had been between six and twelve months insane; making an aggregate of 91 per cent. of all recoveries occurring in cases which had been insane less than one year before admission. Ten only, about 2 per cent., had been of longer duration than three years."

Touching the causes of mental disorder, the report says: "More than one-half the cases of the disease in men, in which the cause is known, are produced by a disregard of the known laws of health and morality. * * * And in females, although with them there is a greater susceptibility to the disease from wounded affections and from disturbance of the emotional and sentimental part of our nature, yet fully one-third of the known causes consist of various derangements of the physical system, most of which might have been avoided by a more correct knowledge and practice of the laws of nature."

We close our review of this report with an extract in which a very proper view is taken of the moral status of persons restored from insanity, and of the consideration to which they are entitled from those by whom they are surrounded:—

"There is absolutely no (other) class of our fellow-beings who need, and at the same time deserve, so much the soothing and sustaining influences of sympathy and confidence as the restored insane. Many of them return to the busy world with distrust, with a feeling that every one about them is looking upon them with jealousy and suspicion, and that they are deemed unfitted for responsibility and trust. They need all that the dictates of Christian benevolence and human philanthropy can do to restore them to confidence in themselves, and to the full development of their usefulness. Easily crushed by the frowns of the world, they can fully appreciate kind attentions, and, most of all, a renewal of confidence. A few recovered patients have been employed in this institution, some of them in positions of no inconsiderable responsibility, and I have never had reason to regret the confidence reposed in them. None of them have disappointed any reasonable expectations."

4. The next report claiming our attention is that of the Massachusetts *State Lunatic Hospital*, at Northampton, for the fiscal year 1862-63. It contains these statistics:—

	Men.	Women.	Total.
Patients in hospital, Sept. 30, 1862	147	185	332
Admitted in course of the year	69	68	137
Whole number	216	253	469
Discharged, including deaths	49	37	86
Remaining, Sept. 30, 1863	167	216	383
Deaths	19	7	26

Died of phthisis, 8; marasmus, 8; general paralysis, 4; diarrhoea, meningitis, suicide, "acute exhaustion," softening of brain, and injury from fall, 1 each.

As in the next preceding report from the Northampton hospital, so in this, no mention is made of any cures in the course of the year. In our review of the former report, our views in respect to this omission were freely expressed, and there is consequently no necessity for saying anything upon the subject at this time.

Dr. Prince has attempted to introduce systematic labour, in the form of simple artisanship, among the patients of the hospital; and his account of the enterprise so well represents some of the advantages, as well as the disadvantages, difficulties, and dangers of any such scheme, that we venture to copy it entire:—

"During the last winter an experiment was made in the manufacture of baskets; and in the aspect of affording a suitable, light, and rather interesting occupation to a number of the patients, and in all its results, it was considered

quite a successful beginning. Pecuniarily it was a total failure. There was no money made, but there was not much lost. There was no outlay for tools or material. The materials were supplied, the simple apparatus necessary was loaned, the manufactured articles removed without cost, and the labour paid for. The amount received very nearly paid the wages of the men hired to superintend the work. No accident and nothing of an unpleasant nature occurred to detract from the satisfaction the results gave, excepting the necessary discharge of an overseer for what was considered an abuse of a patient, and the elopement of one patient from the room temporarily occupied as a workshop, and the threatening of one patient by another with a knife. The daily products of the labour of each patient varied, according to natural aptitude and mental condition, from one-twentieth to one-tenth of that of an ordinary hand working under the usual stimulus to labour. Our accommodations limited the number who could be employed at any one time to advantage, and the variable mental state of the men rendered frequent changes of hands necessary even in this small number. The same cause produced also a corresponding variation in the amount of labour performed on different days by the same patient; and in the quality of the work done on different days by the same individual, the same variation was evident, depending on some change in his mental condition not otherwise appreciable.

"Although but little over one thousand baskets were made, the experiment, with its small results, was considered quite interesting, as it seemed to epitomize the whole scheme of mechanical labour for the insane, and to stand as a sort of type of like experiments. In some respects it was exceptional.

"The branch of industry selected was one not requiring great mechanical skill. A few days sufficed for 'learning the trade.' The progress through the usually tedious stage of apprenticeship to the full dignity of 'journeymen' was rapid for most, although some lingered long by the way. The circumstances under which the experiment was tried undoubtedly conduced to the favourable pecuniary result; for there was no expenditure for materials nor tools, and the loss of material by waste and 'apprentice work' was borne by others. A further prosecution of the experiment would undoubtedly have produced better average results, inasmuch as the more expensive period of pupilage had passed, and production would have increased without any corresponding increase of expenditure.

"The experiment very well represents the prominent features of those carried on upon a much larger scale. There is the difficulty in securing overseers possessing the necessary qualifications of skill in the business, and the much more important moral qualities, the absence of which at once destroys the value of the experiment in its most important aspect as a hygienic measure. Such an overseer must, with the strictest honesty, possess the most imperturbable patience and good nature under provocations and annoyances to which he is sure to be subjected in his endeavours to extort unrequited labour in an unaccustomed direction from men who have little or no interest in this work, and who wish only to be left alone, who are often made nervous and irritable by any attempt to fix continuous attention upon anything at all taxing their mental powers, and on whom many of the chief incentives to useful labour are entirely inoperative.

"Two of the principal dangers attending these enterprises are also indicated in this short experience. The use by the insane of tools which may be suddenly converted into deadly weapons, is a danger not to be overlooked nor underestimated, but constantly and vigilantly guarded against; and, with the greatest care and watchfulness, accidents from this source must be expected to occur occasionally in the future as they have in the past. It is a danger that constantly limits the number which can be safely and advantageously employed, and fearfully increases the responsibility of those having the direction of these labours. The elopement of one of the men exposes another difficulty of greater or less weight according to the security of the work-rooms and the vigilance of the overseers. But in the greater freedom from restraint, and the frequent passing from place to place of those employed, the liability to loss by elopement cannot be lost sight of.

"The manufacture of mats has been pursued for some years as a means of occupation in stormy weather, for the hands usually employed on the farm, and

has well answered its purposes of pleasant diversion and the supply of a constantly recurring want of the house.

"The manufacture of palm-leaf hats was attempted, and persevered in for a length of time sufficient to show that it is a branch of industry not well suited to our patients, or rather to the class of patients for whose improvement employment is most needed. It requires considerable skill beyond the easy acquisition of the demented, a fixedness of the attention not easily secured, together with arithmetical combinations quite puzzling to the impaired and restless minds of those attempting them."

5. At the *Hartford Retreat for the Insane* the medical history of the official year ending with the close of March, 1864, furnishes the following numbers:—

		Men.	Women.	Total.
Patients in hospital, March 31, 1863	.	112	119	231
Admitted in the course of the year	.	60	83	143
Whole number	.	172	202	374
Discharged, including deaths	.	55	88	143
Remaining, March 31, 1864	.	117	114	231
Of those discharged, there were cured	.	26	46	72
Died	.	11	10	21

Died from exhaustion, 4; general paralysis, 3; old age, 2; general debility, 2; exhaustion of acute mania, 2; epilepsy, 2; phthisis, 2; suppressed eruption, diarrhoea, apoplexy, disease of the bowels, and disease of the brain, 1 each.

"During the year the house has at all times been full, generally crowded beyond its comfortable capacity."

In his remarks upon "improvements," Dr. Butler says: "The bowling-alley is a favourite and useful resort for our ladies, and will become more so when inclosed within the airing court. * * * Our billiard-room is a great and apparently almost indispensable relief and comfort to our convalescent gentlemen. It is in constant use. * * * But the greatest gain of all has been from the improvement of our grounds; and from these, in our summer months, we are deriving the greatest help."

6. At the *Frankford Asylum*, in the course of the fiscal year ending with the close of February, 1864, the principal numerical results of the medical history were as follows:—

		Men.	Women.	Total.
Patients at the beginning of the year	.			56
Admitted in course of the year	.			22
Whole number	.	33	45	78
Discharged, including deaths	.	7	8	15
Remaining at the end of the year	.	26	37	63
Of those discharged, there were cured	.	2	4	6
Died	.	2	0	2

Died of chronic enteritis, 1; paralysis of the insane, 1.

"With one exception, there has scarcely been a case of serious illness among those who have resided for more than a year in the asylum."

Dr. Worthington, like his peers, has "had to regret the removal of patients while undergoing a course of treatment, and before sufficient time had been allowed to test the efficacy of the remedies employed."

We copy two passages from the remarks upon the causes of mental alienation, the first of them relating to what is called a "constitutional tendency" to the disorder:—

"It is not designed at present to enter into a consideration of this constitutional tendency, further than to say that it appears to be generally inherited—not always from an *insane* ancestry, but more frequently perhaps from one in which the tendency has not yet reached that point of development. That this view is correct, is shown in part by the history of a considerable number of cases which have been under care in the asylum, where brothers and sisters in

several different families in which it had not been known to exist previously were attacked by the disease, while the cases that can be traced to a direct hereditary origin are of comparatively rare occurrence. The peculiar organization which constitutes this tendency may be regarded as a deviation from the normal type of the species, which, like other deviations of the same kind, according to a law which holds good in the lower animals as well as in man, tends to revert to the original type; or, after a few generations of progressive deterioration, to become extinct. The tendency of these perverted types to die out and become lost, is shown in this particular class by the fact that a large majority of the insane as represented in asylum statistics are unmarried. On this view of the subject, the hereditary increase of insanity is less an evil than has been generally supposed."

"Several instances have come under notice where persons engaged in nursing sick relatives, have, by neglecting the proper and necessary care for their own health, become the subjects of serious illness, terminating in insanity. Persons of delicate constitutions especially, require abundance of sleep, when placed in situations where the mind is subjected to any severe strain; and even robust men have been known to break down and be attacked with fatal disease of the brain, apparently from no other cause than denying themselves sufficient sleep, in order that they might have more time to devote to their business."

7. The subjoined statistics are gathered from the report for 1863, of the *Mount Hope Institution* :—

		Men.	Women.	Total.
Patients in hospital January 1st		102	126	228
Admitted in the course of the year		158	51	209
Whole number		260	177	437
Discharged, including deaths		144	63	207
Remaining December 31st		112	116	228 ¹
Of the discharged, there were cured		32	27	59
Died		13	10	23

Of the patients admitted, the origin of the mental disorder of 17 is attributed to "excitement of the times."

"On analyzing the presumed causes of the attacks of insanity that have been presented before us this year, it would appear that a large proportion of the cases have had their origin in some form of mental shock; or the mental disturbance has resulted from the wearing effects of long-continued anxiety and trouble. * * * * The operation of these causes is so obvious, and so palpable, as to be at once perceived even by the least observant.

"The mind of one of our female patients became suddenly affected on hearing that one of her children had fallen into a well and was drowned. Another female became suddenly deranged in consequence of witnessing the horrible spectacle of a mass of mangled bodies being thrown into a heap and burned, after one of the battles of the Potomac. Another lost her reason in consequence of the appearance of a body of soldiers at her house at night, who greatly terrified her, and threatened to shoot her if she did not immediately disclose where her husband was concealed.

"But causes of this nature, which operate by producing a powerful mental shock, constitute by no means the most frequent. Besides these, and in addition to those who are rendered insane by past and present calamities, large numbers fall victims to this disease purely by the *anticipation of evil*. * * * * There are few men or women who have not dreaded a hundred evils which have never come upon them; and every physician must have observed the miserable consequences of an over-anxious care for the future. Indeed, we believe that the dread of future evil is, on the whole, more injurious to both mind and body than even the influence of present care and sorrow.

"Samuel W., aged 54, was a carpenter, and an industrious, honest, and up-

¹ These numbers are extracted from the report. According to the figures preceding them, they should be 116—114—230.

right man. Up to the 19th of April, 1861, he had manifested no symptoms of mental disorder, had been of strictly temperate habits, and had experienced no great trouble or cause for sorrow. * * * The events of the 19th of April made a powerful impression upon his mind. He indulged in the most fearful forebodings as to the future—imagined the city would be destroyed, and all involved in ruin and desolation. He became indifferent in regard to his employment, no longer sought work, ceased to take an interest in his domestic concerns, neglected his family, and passed his time in brooding over imaginary troubles and evils. He began to sleep less soundly, his mind being tortured with vague fears and groundless apprehensions. His whole character became changed, his feelings and affections completely perverted, and well marked symptoms of insanity were at length fully developed."

8. At the *Central Ohio Lunatic Asylum*, in the fiscal year ending October 31, 1863, those general facts which we are accustomed to extract from the reports of each hospital were as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year	140	120	260
Admitted in the course of the year	69	79	148
Whole number	209	199	408
Discharged, including deaths	83	73	156
Remaining at the end of the year	126	126	252
Of the discharged, there were cured	51	49	100
Died	14	6	20

In February, smallpox appeared in the hospital, and, "notwithstanding the most thorough prophylactic measures," prevailed until July, proving fatal in five cases. A gymnasium in the rear grounds was converted into a smallpox hospital, and surrounded with a paling fence. Throughout the whole period, the disease was epidemic in the region in which the hospital is situated.

The attentive reader cannot fail to observe the very large number, both actual and relative, of cases which are discharged cured from this hospital. The actual number, the past year, as will be seen above, is 100. "The annual average, for seven years past, has been 102. The relative number, in comparison with all who were discharged is, for the year covered by the report, equal to 64.1 per cent. This proportion of cures has few, if any parallels in the history of other hospitals; and, inasmuch as it continues for several successive years, there must be some cause for it, the operation of which is neither casual nor transitory.

The principal cause lies, undoubtedly, in the nature of that part of the statutory laws of Ohio which relate to the insane and the institutions intended for their care and remedial treatment. Dr. Hills, though an able superintendent, does not claim the possession of such skill as would enable him, in cases of insanity in general, to effect a cure in from 25 to 50 per cent. more than are effected by the superintendents of other hospitals. He frankly attributes the results to the operation of the laws just mentioned.

Let us look for a moment to the conditions and circumstances under and amid which the benevolent institutions of Ohio exist and are conducted.

The constitution of the State declares as follows: "Institutions for the benefit of the insane, blind, and deaf and dumb, shall always be fostered and supported by the State."

The statute laws provide that, 1st. "All persons who have been, or may hereafter be, admitted into either of the asylums belonging to the State, shall be maintained therein at the expense of the State." 2d. "Selections shall be made, preferring first, recent cases; second, chronic cases, presenting the most favourable prospect of recovery." 3d. "Incurable and harmless patients may be discharged, whenever such discharge is necessary to make room for a recent case." And 4th. "No person who has been returned from an asylum as incurable, or who has been insane more than two years last past," shall be admitted unless there be abundant room.

We have heretofore mentioned, in terms of commendation, the nobility of

spirit manifested by the Legislature of Ohio, when, without a precedent among the sister States, it manfully stood up and took the initiative in casting the burthen of the pecuniary responsibility, for the treatment of the insane in her hospitals, upon the treasury of the commonwealth. Under the law by which this was done, and the other provisions just quoted, the "immediate and ultimate results," according to Dr. Hills, in his report for 1860, when compared with the operation of the laws in most of the other States, are:—

"1st. Greater promptitude in getting cases into the asylum in their early or curative stage.

"2d. Less disposition to remove them before convalescence is complete.

"3d. As a consequence of the first, a less amount of injudicious treatment before admission, tending to prevent recovery.

"4th. The treatment of a greater number of cases in a given period of time, with the same asylum capacity.

"5th. Thereby more fully meeting the demands for the care of the insane.

"6th. Removing entirely the danger of cases passing from the recent and curable stage to the chronic and incurable, while waiting for their turn, an indefinite period of time, for room in the asylum.

"7th. In so far as a greater number of recoveries result in a given time, diminishing the number of cases of insanity in the community.

"8th. By diminishing the average duration of cases of insanity, as well as their number, diminishing the total amount of expenditure in maintaining the insane.

"9th. Obtaining a great moral power and influence upon remaining inmates, from the prestige of success."

But Dr. Hills has failed to mention one of the most obvious effects of these laws—and perhaps because it is so obvious—which contributes more largely than any other towards the increase of the percentage of recoveries. And this is, that epileptics, idiots, paralytics, cases of senile insanity, and chronic dementia, classes which constitute a very considerable part of the admissions into some hospitals, are, or may be, kept out of those in Ohio. Indeed, if there be within the State a sufficient number of curable cases to fill the hospitals, and to keep them filled, no incurable need ever find a place within their walls. Certainly, under such conditions, the number of cures, both positive and relative, ought to be large.

We had long since the intention, at some time, to explain more fully than we ever yet have done the practical workings of these laws. The work now comes to our hands performed by another, and we gladly avail ourselves of the opportunity to give it a place. The following is copied from the report before us, but originally appeared in the report for 1862 of the trustees of the hospital at Worcester, Mass.

"In Ohio, 73.7 per cent.; in Indiana" (where the hospital is likewise directly supported by the State), "70 per cent.; and in Massachusetts" (where the hospitals are not so supported), "64.8 per cent., in their State hospitals, were sent in the first year after they were attacked. As a necessary consequence, those States which sent the largest proportion in the early and curable stage, received back the largest proportion in health and power of usefulness, and had the smallest proportion left in confirmed, immovable lunacy, to be supported for life by their estates or the public treasuries.

"In the three public hospitals of Ohio 54.59 per cent. of all that were sent to them were restored, and 43.40 remained insane for life. In Massachusetts 44.05 per cent. were restored, and 55.95 per cent. remained a life burthen upon the people. The proportion of patients restored out of all admitted to the hospitals is 23 per cent. greater in Ohio than in Massachusetts. Now, no one will suppose that the hospitals in Ohio are managed with more skill than those of this State (Massachusetts). But this difference in the results of their labours is due to the difference in the proportion of patients sent in the curable stage of their disorder.

"Looking at this matter merely as a question of political economy, in its bearing upon the remote as well as present means and prosperity of the State, it is plain that there are important advantages on the side of the free and open (Ohio)

system of managing the public charitable institutions. They send back to society a larger proportion of workers, producers, self-supporters and contributors to the public treasury, and leave a smaller proportion of the useless and burdensome class. Inasmuch as they have a better or more available material to work upon, they produce a more successful result, and convert a larger proportion of costly men and women into profitable members of the body politic. The Worcester and Taunton hospitals have received 8,490 patients, and restored 3,740 to health. If these could have been sent at as early a stage of their disease, and as large a proportion restored as in Ohio, then 23 per cent., or 860 would have been added to the useful and self-sustaining citizens sent back to the world, and as many taken from the class that has been or must be supported and cared for through life."

It is very clear that, in the present condition of things, when perhaps no State has hospital accommodations for one-half the insane within its jurisdiction, the Ohio system effects the greatest amount of good, both pecuniary and humanitarian. We have hoped, in years past, that the benevolent enterprise of erecting hospitals would be pursued with an ever increasing zeal, until every person with disordered mental powers would be able to find a place in an institution especially prepared for the benefit of those who are so afflicted. But the great national convulsion which began in 1861 has, for the present, destroyed that hope. Under these circumstances, we freely acknowledge that the Ohio system appears to us to be the best which has hitherto been devised in America.

In Ohio, as in most of the States, many incurable insane are confined in county poor-houses—called, in Ohio, "infirmaries;" while some are found in jails and others are "farmed out," or "sold to the lowest bidder for care and keeping." In view of the large number of this class in the State; considering the miserable condition in which many of them are known to be, and taking it for granted that a sufficient number of hospitals for their accommodation, similar to those now in operation, will never be built, Dr. Hills proposes a plan for the suitable protection and care of them. He would have the State purchase a farm of about 500 acres, centrally situated, and with an appropriation of from \$30,000 to \$40,000, erect thereupon two buildings, one for either sex, and each of sufficient capacity for 100 patients. These should be immediately put in operation. On each successive year he would add two more buildings of like character and dimensions, until ten should be erected, giving accommodations to 1000 patients. The whole establishment should be organized and conducted similarly to the existing hospitals.

Dr. Hills remarks that, "after a full examination of the subject, and observation in the various institutions in this country and many of those in the old world," he is satisfied that the institution, by "judicious management, would develop an almost self-supporting power."

We have always opposed asylums for the incurable insane, believing the plan now pursued by our hospitals, generally, as far the best. But as such hospitals for all the insane are now apparently out of the question, we should rejoice to see the plan of Dr. Hills put upon trial.

9. The subjoined numbers are taken from the report of the *Hospital for the Insane* of the State of Wisconsin, for the fiscal year ending September 30th, 1863.

		Men.	Women.	Total.
Patients in hospital Sept. 30th, 1862	.	67	64	131
Admitted in the course of the year	:	62	61	123
Whole number	:	129	125	254
Discharged, including deaths	:	44	22	66
Remaining, Sept. 30th, 1863	:	85	103	188
Of those discharged, there were cured	:			37
Died	.			9

"In the treatment of patients," says Dr. Clement, "we have still kept in mind the importance of means mentioned in former reports. To the billiard table, stage for tableaux, &c., which we had before, we have added a bagatelle board,

Dr. Lewis's pangymnasticon for gymnastic exercises, Lewis's spirometer and blow gun, and battledoor. Backgammon and dominoes are kept up, and various kinds of music, also dancing. We have obtained a covered carriage which holds nine persons, and this has been a source of great pleasure and improvement to our female patients. Occasional pic-nics have been given, with chowders for nearly the entire number of patients, and with music and dancing. A few suitable patients have enjoyed fishing, rowing, and swimming in the lake."

10. The report for the fiscal year ending Sept. 30th, 1863, of the *Kentucky Eastern Lunatic Asylum*, contains the following general summary:—

	Men.	Women.	Total.
Patients at the beginning of the year	137	94	231
Admitted in course of the year	23	18	41
Whole number	160	112	272
Discharged, including deaths	27	14	41
Remaining at the end of the year	133	98	231
Of those discharged, there were cured	15	6	21
Died	10	5	15

Died of phthisis pulmonalis, 5; exhaustion, 5; *paralysie générale*, 2; epilepsy, 1; disease of heart, 1; pneumonia, 1.

"Of the 41 cases of admission, only six were of less than one year's standing."

"There are comparatively few of the patients in this institution," says Dr. Chipley, "who are not more or less employed. Agriculture and the care of the pleasure grounds engross the attention of the largest number. Others are occupied in the carpenter's shop, tin shop, in making or mending shoes, assisting in the wards, in kitchen, in repairing brick-work or plastering, glazing, painting, sawing wood, carting coal, &c., in a word, in all manner of employment that we find it practicable to give. It matters not how little one is capable of doing, the execution of that little is his advantage; he goes to the table with an improved appetite, and to bed with an increased disposition to sleep; and if nothing more is accomplished, these are blessings to the insane."

11. It appears by the report of the *Kentucky Western Lunatic Asylum*, for the official year terminating with the close of October, 1863, that Dr. Montgomery, the late superintendent, has retired from that hospital, and has been succeeded by Dr. James Rodman.

	Men.	Women.	Total.
Patients in hospital Nov. 1, 1862	58	50	108
Admitted in course of the year	14	6	20
Whole number	72	56	128
Discharged, including deaths	12	2	14
Remaining, Oct. 31, 1863	60	54	114
Of those discharged, there were cured	6	2	8
Died	3	0	3

It will be remembered that the buildings of this hospital were consumed by fire, a few years ago. A new edifice is in progress, and "there are already applications enough to fill it, when completed, to its utmost capacity; and every week adds to their number. * * * Before the expiration of another year the asylum building will be completed."

The admissions of the past year consisted, almost without exception, of chronic cases.

It appears that there are many epileptics in the two Kentucky hospitals, and Dr. Rodman says: "The erection of a hospital for epileptics exclusively, is well worthy the attention of the General Assembly."

12. The results, in a medical point of view, of the operations of the *Illinois State Hospital for the Insane*, for the two fiscal years terminating on the 31st of November, 1862, are thus represented.

	Total.
Patients in hospital Dec. 1, 1860	231
Admitted in course of two years	386
Whole number	617
Discharged, including deaths	315
Remaining, Nov. 30, 1862	302
Of those discharged, there were cured	165
Died	34

Died from exhaustion of acute mania, 11; exhaustion of chronic mania, 8; consumption, 5; fever, 2; paralysis, 2; epilepsy, 2; suicide, 2; apoplexy, 1; fall from window, in attempt to escape, 1.

In his remarks upon the influence of the present war in producing insanity, Dr. McFarland says: "The most interesting part of the inquiry is, whether the sufferings and privations of the field itself, or the sympathies and bereavements of those left at home, have contributed most to our results? A first thought would assign as much of the weight of the common affliction to the latter, at least, as to the former. Yet it is strikingly evident that the reverse is true. The hardships and sufferings of warfare have made themselves strikingly felt, while the excitements, anxieties, and sometimes overwhelming bereavements of those whose all has been pledged, have hardly made a trace on our records. It proves that the same devotion which gave fathers, brothers, and sons to the chances of the conflict, has so nerved all hearts to the consequences of the sacrifice, that even the terrible disclosures of the battle-field bulletins have carried few beyond the bounds of temperate grief. Indeed, it may be claimed that the 'war excitement'—limiting the phrase to its true meaning—has been healthful in its operation upon the public mind."

These remarks appear to have been suggested by the figures in the subjoined table, showing the number of patients admitted, in the two years, whose insanity appeared to have its origin in circumstances connected with the war.

Soldiers brought from camps, hospitals, &c.	14
Friends made insane from sympathy, anxiety, &c.	2
Cases produced by war excitement, generally	7
Total	<hr/> 23

In treating of labour and its results in hospitals for the insane, the report says: "It must be considered that, in foreign institutions, where the success of a system of skilled labour is so much vaunted, those engaged in it look to the institution, where they receive all they can expect to obtain anywhere—a bare subsistence—as a desirable haven, and confine all their aspirations to its limits. Lacking the mental elasticity which characterizes those reared under democratic institutions, they soon settle into a mental level, too low to be reached by the incentives of hope and ambition, and automatically follow, under an unexpensive supervision, those trades to which they have been accustomed. The kind of labour there pursued with a profit, would be a bill of expense if attempted here; and mental occupation fully as valuable can be obtained otherwise."

In regard to the popular idea of insanity, Dr. McF. says: "Society has yet a duty to learn towards the lunatic. His state has no kindred to crime, and should be regarded without aversion. He is not a fractional part as dangerous as he even appears. A few kind words, looks of confidence and sympathy, or a seat at the table, will smooth away the most dangerous features worn by any. It is mostly the neglect of society which has made him dangerous, and when this truth is fully learned, he will be regarded with far different eyes than at present."

This is somewhat hyperbolical. Some of the insane *are*, under any circumstances, dangerous.

13. The report of the *Indiana Hospital for the Insane* for the fiscal year ending Oct. 31st, 1860, is signed by Dr. Athon, who had for several years occupied the place of superintendent; but he had already resigned the office, and Dr. James H. Woodburn had been appointed as his successor.

	Men.	Women.	Total
Patients in hospital Oct. 31, 1860 . . .	151	146	297
Admitted in course of the year . . .	111	103	214
Whole number . . .	262	249	511
Discharged, including deaths . . .	106	105	211
Remaining, Oct. 31, 1861 . . .	156	144	300
Of those discharged, there were cured . .	57	57	114
Died . . .	11	16	27

Died of maniacal exhaustion, 9; phthisis, 8; general paralysis, 4; suicide, carcinoma, tabes mesenterica, esophagitis, chronic diarrhea, and "persistent epilepsy," 1 each.

"War excitement" is the alleged cause of the mental disorder of 15 of the patients admitted in course of the year. Three of them were females.

"There has been no prevailing disease among the patients, though the list of mortality is greater than usual. This is attributable to the weakened physical condition in which a large number of patients are admitted to the hospital. The practice of reducing the insane in order to assuage their malady, still prevails to a very injurious extent in every part of the country. The majority of cases require the opposite treatment."

We proceed to Dr. Woodburn's report, for 1862.

	Men.	Women.	Total
Patients in hospital Oct. 31, 1861 . . .	154	146	300
Admitted in course of the year . . .	103	97	200
Whole number . . .	257	243	500
Discharged, including deaths . . .	107	95	202
Remaining, Oct. 31, 1862 . . .	150	148	298
Of those discharged, there were cured . .	63	51	114
Died . . .	7	7	14

Died from exhaustion of chronic mania, 5; exhaustion of acute mania, 3; pulmonary consumption, 2; erysipelas, general paralysis, pneumonia, and suicide, 1 each.

"The library has been enlarged from about one hundred volumes to nearly four hundred."

Dr. Woodburn's report relates chiefly to the domestic concerns of the hospital.

P. E.

ART. XV.—Sanitary Commission United States Army.

1. *The Sanitary Commission of the United States Army: a Succinct Narrative of its Works and Purposes.* 8vo. pp. 318. New York: Published for the benefit of the United States Sanitary Commission, 1864.
2. *The Western Sanitary Commission; a Sketch of its Origin, History, Labours for the Sick and Wounded of the Western Armies, and Aid given to Freedmen and Union Refugees, with Incidents of Hospital Life.* 8vo. pp. 144. St. Louis, Mo.: Published for the Mississippi Valley Sanitary Fair, 1864.

THE leading object of these Sanitary Commissions is one of the highest importance, as well in the amelioration of individual suffering among our soldiers, by ministering as far as may be to their well-being and comfort, as in increasing the vigour and efficiency, and preserving the numerical force of our armies, by suggesting, and aiding to carry out, under the proper authorities, such sanitary regulations and reforms as may be demanded to insure the health and strength of the soldier in the camp, the barrack, and the field, and the prompt and entire recovery of the sick and wounded in the several military hospitals.

The efficient manner in which this object has been accomplished throughout the immense field over which the labours of our Sanitary Commissions extend; the large amount of money they have been enabled to raise through voluntary contributions from the citizens; the careful and judicious manner in which this

money has been, in general, expended, and the incalculable amount of good, both physical and moral, which has been accomplished through their instrumentality, will render the history of the Sanitary Commissions of the United States a stupendous and enduring monument commemorative of the liberality and active philanthropy of our age and people.

"The first organized attempt to mitigate the horrors of war, to prevent disease and save the lives of those engaged in military service, by sanitary measures and a more careful nursing of the sick and wounded, was made by a commission appointed by the British Government during the Crimean War, to inquire into the terrible mortality from disease that attended the British army at Sebastopol, and to apply the needed remedies. It was as a part of this great work that the heroic young Englishwoman, Florence Nightingale, with her army of nurses went to the Crimea to care for the sick and wounded soldier, to minister in hospitals, and to alleviate suffering and pain, with a self-sacrifice and devotion that have made her name a household word wherever the English language is spoken. In the armies of France the Sisters of Charity had rendered similar services, and even ministered to the wounded on the battle-field, but their labours were a work of religious charity and not an organized sanitary movement.

"The experience of armies having shown that not less than five soldiers die of disease to every one killed in battle, it became a problem whether this immense loss could not be greatly diminished by sanitary means, and the military strength of a people be proportionally increased by a greater economy of life, and the superior health, vigour, and aggressive power of its armies. To this consideration was also added the religious duty of a people to minister to the comfort and health of men engaged in so perilous a service, and who leave their homes and families and kindred to encounter sickness, wounds, and death for the sake of country and liberty.

"The result of the inquiries of the British Commission and of the researches of medical science has clearly established the fact that the 'efficiency of an army must ever depend upon the state of health of the corps which compose it,' and that 'the history of war can no longer be confined to bare details of the plans of battles and the manœuvres of armies,' but that 'we must refer to other elements, and principally to the sanitary condition of troops, as the causes of our victories, or the reasons for our disasters.'

The first of the publications before us comprises a succinct narrative of the origin, purposes, progress, and present condition, with the methods and departments of labour of the United States Sanitary Commission. It presents in connected outlines, and in reviews, and condensed abstracts of current reports, a concise record of the objects and spirit of the Commission and of the manner in which its practical operations have succeeded in identifying the cause of humanity with the strength and efficiency of our armies.

The narrative is full of matter of the deepest interest to every friend of humanity, who, while he recognizes the importance of the contest in a national and political point of view, would, nevertheless, look even beyond it, and by every means within his power extend and augment "the popular appreciation of the sacredness of human life and human sympathies, which shall yet elevate the brotherhood of States and Nations above the very causes of war."

The second of the publications whose title stands at the commencement of the present notice, performs for the Western Sanitary Commission—the setting forth of the organization and varied operations of this important co-ordinate branch of the National Commission—the same office the first does for the United States Sanitary Commission.

D. F. C.

ART. XVI.—*First Outlines of a Dictionary of the Solubilities of Chemical Substances.* By FRANK H. STORER. Part III. (Conclusion.) Svo. pp. 256. Cambridge: Sever & Francis.

THE two preceding parts of Mr. Storer's able Dictionary have been reviewed in these pages at the time of their appearance, and in the part which now finishes the work we find a fitting conclusion to what was so well commenced.

The third part continues the subject of the oxides, part of which appeared in the previous portion. After discussing a number of less important substances, but which, from their very number and the little that is known of them, must have cost no small labour to collect the information given, the subject of phosphoric acid and the phosphates is taken up. The discussion of the solubilities of these substances covers twenty-three double-column pages. Next follow the interesting groups of the Phosphates, Picramates and Picrates, the Resins and Resinates, and the Selenium compounds. Upon the Silicates the information is, as in other cases, fully brought up to the latest investigations, and is especially very full in the matter of the different varieties of the soluble silicates. The same may be said of the article on Sugar, with which much pains has been taken.

The capital group of this part, however, must of course be that of the Sulphates; accordingly, we find that the discussion of this portion of the subject covers nearly fifty pages, of which three belong to a single salt—the sulphate of baryta.

Other important sulphates, especially those of copper, iron, lead, magnesia, potash, and soda, are very fully treated, and the beautiful interpolation tables of Schiff and others are always given. The article on Sulphuric acid, which precedes the sulphates, is well written and full, and many valuable tables have been collected by the author. Next follow other interesting sulphur compounds, the Sulphides, Sulphites, Sulpho-carbonates, and the many other sulphacids and their compounds. The Tartrates, Tellurates, Titanates, Tungstates, and Zinc, bring up the conclusion of the book.

In those cases in which uncertainty exists, or conflicting statements have been made, Mr. Storer does not undertake rashly to reject either side, but gives us the statements as they stand, that we may form our own conclusions upon a basis as complete as the state of the subject permits. In some cases, a pains-taking experimenter may find discordances in his own work which he cannot reconcile. In such cases, if he is satisfied that his own work has been well and carefully done, he does best simply to offer these results as he obtains them, and in such cases Mr. Storer has presented the subject in the same manner, as, for example, in the case of Bischoff's investigation on the solubility of the di-phosphate of baryta in nitric acid.

It has been a matter of pleasure to us to see that Mr. Storer's book has elicited the warmest commendation as well from European chemists as from his own countrymen. It has already taken its place as a standard work. Chemical science has undergone so vast an expansion that the taking up of particular branches as specialties has become a necessity. In this way, and in this way only, can the work be done with thoroughness and completeness. We sincerely hope that Mr. Storer's labours will not terminate with what he has already accomplished, but that he will enrich chemical literature with other and equally valuable contributions.

M. C. L.

ART. XVII.—*Clinical Memoirs on Diseases of Women.* By ALFRED H. M'CLINTOCK, M.D., F.R.C.S., etc. etc. With engravings. *Medicina tota est in observationibus.* Baglivi. 8vo. pp. 435. London: 1863.

This is an admirable series of essays, or "memoirs," as the author calls them, on many of the most important diseases of women, and by a writer whose ample experience and ability as a practitioner in this department of medicine have been long recognized in this country as well as in Great Britain. The work throughout is a strictly practical one, based entirely on clinical observations, and having for its single aim clinical instruction. It is so far original as it embodies the fruits of the author's eleven years' experience in the gynecological wards of the Dublin Lying-in Hospital, at the same time, however, the contributions from the leading authorities on female disease have not been neglected.

The memoirs embraced in the present volume are sixteen in number, each of them being devoted to a particular disease or subject, namely, puerperal pelvic cellulitis; pelvic inflammation and abscess in the non-puerperal state; procidentia uteri and the use of pessaries; inversion of the uterus; fibrous tumours of the uterus; polypus of the uterus, tumours of the vagina and of the vulva; pelvic, pudendal, and uterine haematocele; stone in the bladder; mammary inflammation and abscess; secondary hemorrhage after parturition; the semeiological value of the pulse in childbed; dropsy of the ovum, and cystic diseases of the ovum.

Each of these subjects is treated at some length, and with a degree of clearness well adapted to convey to the mind of the reader correct conceptions of the author's teachings. These teachings are always illustrated and enforced whenever they admit of it by well executed drawings, in addition to original clinical histories.

There is no one of the memoirs presented by Dr. M'Clintock that is not replete with valuable information; no one of which, had we the space at our command, a most interesting and instructive analysis could not be prepared. We must confine our notice, however, to the memoir which treats of "mammary inflammation and abscess." We have made choice of this, not so much from its greater worth, but from the extreme frequency, especially in the nursing female, of "gatherings" of the breast, and from the suffering and inconvenience to which these "gatherings" give rise, and the loss of the lacteal function, and the local deformity which so often result from them when neglected or improperly treated. It is these which invest everything in relation to the causation, pathology, and therapeutics of mammary abscess with such deep interest.

Dr. M'Clintock remarks that several instances of mammary abscess occurring during gestation, at the fourth month and upwards, have come under his notice. When it arises spontaneously its occurrence must be explained by the hyperæmic condition of the gland, which is its normal condition at the period referred to, having exceeded its physiological condition and passed into a state of actual phlogosis. He has been unable to detect any notable difference in the symptoms or course of such abscesses from those which take place *post-partum*, except that they are, perhaps, more frequently situated in the lobules, and are more tedious in their cure. When allowed to burst spontaneously, Dr. M'Clintock has generally observed that they did so by two or more separate openings. He has seen cases where there were four or five fistulous openings in the breasts when labour set in. When the abscess forms early in gestation it may completely heal before the setting in of labour, and with a little extra caution the woman will be able to suckle from that breast. Generally speaking, however, a breast that has been once the seat of inflammation and abscess is more liable to be again affected during lactation.

Dr. M'Clintock thinks he has found women to be more obnoxious to mammary inflammation and abscess in their first than in subsequent pregnancies. Of the abscesses of the breast, which he has seen during lactation, the great majority made their appearance within six weeks after delivery. A few occurred as late as ten or twelve months after delivery, and still fewer in the intervening period. He has preserved the notes of *eighty-two* cases of mammary abscess, observed by him in hospital and private practice. In eighteen of these cases both breasts were affected; in *twenty-nine* the right breast only, and in *thirty-five* the left. In only *thirty-four* instances was the number of the pregnancy noted. In these the abscess followed a first confinement on *twenty-three* occasions, over two-thirds of the entire number. Of the *eleven* multiparae, three occurred in second pregnancies, no abscess having occurred in the first, as no attempt had been made at nursing.

The lateral and inferior lobes were the parts of the breast most frequently involved.

A very large proportion of the patients had sore nipples preceding the occurrence of mammary inflammation of the breast. Dr. M'Clintock, on a few occasions, has observed the inflammation of the breast to supervene immediately and directly upon ulceration or fissure of the nipple, as though it were an extension from it, whilst in other cases the gland became affected secondarily, in the same way as do the inguinal glands from irritation of the vulva or urethra.

"The great danger, in fact, to be apprehended from sore nipples," he remarks, "is mammary inflammation; and this may be considered imminent when the base of the nipple becomes hard and tender, and the act of nursing is productive of acute pain. Poulticing the nipple with bread and water, and giving it perfect rest, are the best means of checking this inflammation, and preventing its extension to the substance of the gland. The child should be applied to the breast only at long intervals, and for a short time, until the distension shall have diminished, and the flow of milk through the ducts become more free. By rest and a few hours' poulticing, the inflammation of the nipple may generally be removed, but the sore still remains, and this must engage close attention if the patient is to go on nursing. Under these circumstances I always tell the patient plainly that her continuing to nurse is attended with a certain amount of risk to herself. If, so far, there be no sign of inflammation in any part of the breast, we may safely promise that by *at once* giving up nursing the danger of abscess will be removed. If she persevere till some appearance of inflammation show itself, it is then too late—the mischief is done."

"Of sores of the nipple there are principally three varieties—the abrasion, the fissure, and the ulcer which is the worst of all. For superficial *abrasions*, astringent lotions, or a weak solution of nitrate of silver, often prove very beneficial. If the abrasion be inclined to scab, an unctuous application answers best, and should be applied immediately after nursing. A combination of basilicon ointment, Pernvian balsam, and honey melted together, I have found particularly serviceable. *Fissures* seated at the base of the nipple are a most painful and serious obstacle to nursing. Occasionally they are successfully treated by collodion, or a solution of gutta percha in collodion. This cements the edges of the crack together by forming an adventitious skin or covering that is not easily removed. It should be renewed each time the child is about to be put to the breast. Lightly touching the fissure with solid lunar caustic is also a very excellent application in some cases, and can be tried with cracks near the top of the nipple—a situation in which the former remedy could not be well used."

Ulcerated nipple is not often met with. It is usually the result of negligence and too frequent nursing. The best applications, according to Dr. M'Clintock, are solutions of nitrate of silver, diluted citrine ointment, and the ointment given above. The total relinquishment of nursing is generally required.

The following are stated to be occasionally useful in one or other form of sore nipple: lotions of an aqueous solution of pure tannin or of borax, chalk, spirits of wine, and rose water; equal parts of tincture of galls or of glycerine, and a compound tincture of benzoin, especially in cases of chaps or abrasions; a saturated solution of tannic acid in glycerine, oxide of zinc ointment, calamine ointment finely levigated, Goulard's cerate, resin ointment, white wax ointment, spermaceti ointment, and citrine ointment, singly or combined. It is to be borne in mind, however, that the most important step in the treatment of sore nipples is relinquishment of suckling.

Dr. McClinton remarks of the nipple shield that, whenever it can be used, and the child can be induced to suck through it, it is a very valuable means of protecting sore or tender nipples from the pressure and friction of the infant's gums and tongue. The simple Indian rubber shield he has found to be the most successful. A piece of soft chamois leather, one inch and a half square, with the two adjacent sides sewed together, makes, we are told, a shield which has succeeded when more elaborate instruments have failed.

Dr. M'Clintock has rarely known inflammation and abscess, after delivery, to result from distension of the breast alone, or where there was no irritation of the nipple, or previous abscess of the breast. Nor does he recollect a single instance of mammary abscess occurring in a woman who did not nurse, nor after the death of the infant, where no other cause of inflammation was present.

In fair, lymphatic women of serofulons habits, an attack of acute mastitis sometimes occurs very unexpectedly without any apparent exciting cause, whether cold, injury, over-distension, or sore nipple.

Dr. M'Clintock does not consider the extract of belladonna, applied to the breast, to be superior to the common cerecloth. He has never been able to satisfy himself that, in cases of over-distended breast rapidly verging into inflam-

mation, any good results have followed the application of belladonna beyond the relief of pain.

It is very rare, Dr. M'Clintock remarks, that we can succeed in the reduction of mammary inflammation even when undertaken at the very onset of the attack. After free purging, the best internal treatment he believes to be the use of tar-tarized antimony in nauseating doses; as a local application, he prefers a cold lotion composed of muriate of ammonia dissolved in equal parts of vinegar, water, and spirits of wine. He thinks favourably, also, of the application of ice to the inflamed breast, with the same limitation under which the cold lotion is to be used, namely, not to employ it before the fifth or sixth day after delivery.

When the formation of an abscess seems inevitable, and the cold applications no longer assuage the pain, a flaxseed poultice may be applied and renewed every four or six hours. If the weight of the poultice be complained of, a double fold of lint moistened in the liniment composed of Goulard's water, olive oil, and laudanum, may be substituted. When, as is liable to be the case in patients of quick sensibility and sanguine temperament, the inflammation of the breast is attended with high fever and great pain, the above liniment, or equal parts of belladonna extract and cold cream will sometimes have a very soothing effect upon the breast, and greatly mitigate the patient's suffering. Over it may be applied spongio-piline wrung out of hot water.

Dr. M'Clintock is an advocate for late puncture in cases of mammary abscess. That is, deferring the puncture until the matter has approached so near the surface that fluctuation is quite distinct, and the intervening stratum of integument is very thin. The opening should always be as far as possible from the nipple, so as to lessen the danger of its retraction.

After the opening of the abscess, and the entire subsidence of surrounding inflammation, Dr. M'Clintock considers that strapping the breast is a most admirable means of checking the discharge and obliterating the sac of the abscess. In strapping the breast, he prefers to encircle the gland with strips of adhesive plaster, commencing at the base and extending up to the nipple, a small orifice being cut over the orifice of the abscess to allow the escape of the discharge. The strapping is to be renewed every day or two. When an abscess has been discharging for some time, and seems slow to heal, a lotion of equal parts of water and spirits of wine applied to the orifice has a good effect.

"When," remarks Dr. M'Clintock, "a patient is threatened with mammary abscess, she should cease to suckle the child from the affected breast. Unless it be a great object to her to continue nursing, or that she be a very robust woman and able to bear the double drain upon her, I advise the withdrawal of the child from *both* breasts. The sympathy between the two breasts is so great that the application of the child to the sound breast will continue to stimulate both. Besides this, the milk secreted under these circumstances cannot possess healthful or nutritious qualities."

D. F. C.

ART. XVIII.—*The Principles of Surgery: Clinical, Medical, and Operative. An Original Analysis of Pathology systematically conducted, and a Critical Exposition of its Guidance at the Bedside and in Operations, representing the Principles of the earliest and most exact Diagnosis, Etiology, Prognosis, and Therapeutics, Medical and Operative.* By FREDERICK JAMES GANT, F. R. C. S., Surgeon and Pathological Anatomist to the Royal Free Hospital; Assistant Curator of the Museum of Anatomy and Pathological Anatomy, University College, London, &c. London: John Churchill & Sons, 1864. 8vo. pp. 860.

PATHOLOGY being understood as signifying pathological anatomy, the subject and the object of the work before us may be learned from the title-page.

It is a treatise upon *applied pathological anatomy*, upon *anatomie pathologique*.

gique appliquée, as Cruveilhier names this division of pathological anatomy, the one attached to clinical observation, and having for its object the study of the morbid species in their relations to diseases properly so called—that is to say, to their causes, their symptoms, their march, their terminations, and their treatment! Mr. Gant says:—

“Every form of injury or disease presents certain pathological objects for investigation, by the knowledge of which its therapeutic treatment, medical and operative, *should* be conducted. I allude to the kind of disease or injury, with its situation and extent, as made known by *diagnosis*; its cause or causes, and the operation of the disease or injury itself, as an ‘internal cause’ of other morbid conditions—its relationship, in these respects, being indicated by *etiological* investigation; the foreknowledge of its probable course and tendency to this or that issue, by *prognosis*; and it would appear that, a large assortment of well-ascertained facts having accumulated, the period has now arrived when the attempt may be made to discover guiding principles² in each of these preparatory ‘departments’ of surgery, themselves suggestive of guiding principles of *therapeutic* treatment, and *together* forming rational principles of surgery, which might ever serve to direct the practitioner aright in any particular case, and regulate the course of further investigation.”—p. 11.

The author claims that his work differs conspicuously from all others upon the “principles” or “principles and practice” of surgery. Its originality consists in this, that he has denominated a work upon “applied pathological anatomy” “The Principles of Surgery.” Surgery means literally a work performed by the aid of the hand; the name being applied, however, to the study of diseases or injuries treated by manual operations, and the study of the operations demanded by these diseases. As a distinct branch of the medical profession, this is what is meant by surgery. The *Principles of Surgery* by James Syme is really and truly a treatise on surgical diseases, and the means employed to contend with them. The *Principles of Surgery* by Mr. Gant is, as we have just said, a treatise upon applied pathological anatomy.

In performing the most trifling operation, we must know exactly the seat of the lesion, its nature, and its limits; the changes in form, in the relation of parts, and in texture, caused by this lesion in neighbouring organs; its connection with various internal affections; and, in certain cases, its tendency to be reproduced again. In other words, the surgeon must know, in every case, the pathological anatomy, general, topographical, and applied; but he must know, besides, many other things. In reflecting upon what we have done ourselves, this very day, in practising surgery, we conclude that we were greatly served by a knowledge of anatomy—normal anatomy, we mean. In one case there was secondary hemorrhage on the nineteenth day after a ball had passed through the arm in such a direction that the brachial artery should be found at about the centre of the wound. A cut along the inner edge of the biceps muscle, and an incision through an aponeurosis, led to the median nerve; under and slightly inside of the nerve the artery was surely found, and a ligature placed above and below an orifice found to exist in it arrested the bleeding at once. In another case there was great secondary hemorrhage from a contused wound in the leg, and a ligature was readily applied to the anterior tibial artery, by which the bleeding was at once arrested, because we knew the vessel was to be found at the bottom of the first muscular interstice between the tibia and the fibula. In another case it was necessary to rid a patient of an injured leg, where it was just possible, as anatomy taught us, to amputate below the knee-joint. The section of the tibia was not made above the tuberosity, in order to leave the attachments of the ligaments of the patella, and not to open the synovial sac placed behind it, and even risk the articulation at the knee. The fibula was sawn off, and the head was left attached to the tibia, in order to avoid opening the articulation between the two bones, which in many cases communicates with that of the knee. It is evident that in these three cases the principles or fundamental truths by which we were

¹ See the General Considerations at the beginning of Cruveilhier’s *Traité d’Anatomie Pathologique Générale*.

² “Principle—fundamental truth; first position, from which others are deduced; source.”—Johnson.

guided in the practice of surgery were not derived from pathological, but from *normal* anatomy.

To show the views of Mr. Gant upon the subject, we shall make some extracts from his preface :—

"The operations of surgery were formerly regarded as *purely anatomical performances*. The *System of Operative Surgery, founded on the Basis of Anatomy*, by Sir Charles Bell, was a type of the period to which I refer. At length the influence of *diseased* and *living* conditions became apparent, and, like a dissolving view, the purely anatomical era passed away, and the pathological epoch began. Slowly, as out of a mist, the pathological man, clad in the tattered garb of disease, approached, and crept by stealth into the anatomical theatre. The teaching of the schools and their books on operative surgery thenceforth underwent some improvement, and advanced *somewhat* nearer to the requirements of the practical surgeon.

"Still, however, freighted with relics and mummeries of the dissecting-room, these works abounded with details of the purely anatomical method, and were garnished, not to say adorned, with pictures that bespoke their antiquated origin. The rude designs of the Gothic style were visible beneath the facings of the modern building; and in the construction of even the most recent manuals of practical surgery in this country, the basis is, I conceive, too purely anatomical."

We conceive that Mr. Gant has made one mistake in wishing to avoid another, and that his estimate of the value of pathological anatomy has led him to undervalue the claims of other branches of medical knowledge. Consequently the book which he has written, though an excellent one, considered as a work upon the applications of pathological anatomy to the study of the science and art of surgery, is by no means equally so upon the principles of surgery.

Should a new edition be called for, we venture to suggest not only that the title be changed, but also that it be very considerably curtailed. "The growth of knowledge," Mr. Gant himself argues (p. 84), "is unlike that of other things; for the more it increases, its bulk diminishes." It seems unkind to quote an author against himself, but we conceive it might be fairly done on the present occasion. The volume before us is the most bulky of any we know of, bearing a similar title.

W. F. A.

ART. XIX.—*Enuresis—Incontinence of Urine—in Children and Adults; its Causes, Nature, and Treatment: Comprising especially those Forms of the Disease which are associated with Surgical Affections of the Bladder and Adjacent Parts.* By WM. ABBOTTS SMITH, M. D., Member of the Royal College of Physicians, London, etc. etc. Second edition. 12mo. pp. 154. London: 1863.

THIS short essay furnishes a very useful and highly instructive manual of the pathology and treatment of an infirmity of very frequent occurrence, especially in early life, and which, when overlooked or improperly managed, is among the most annoying and troublesome of the diseases to which the young are subject. The essay contains, it is true, nothing particularly novel: its publication is, nevertheless, well timed, and cannot fail to do good. Owing to the misconceptions which are current concerning enuresis—especially the notion that it is entirely due to the faulty habits of the child, out of which he will very generally grow as he increases in years, a delay has often occurred in resorting to proper medical advice, in consequence of which, in cases where the incontinence was at first curable, it has been allowed to run into a chronic form, over which the physician has little or no control.

Enuresis is, in point of fact, a much more frequent disorder at all ages than, upon first consideration, it would appear to be; and the reticence of persons suffering from it, arising either out of a feeling of false modesty, or else from the importance of the affection being underrated, is often surprising.

As causes of incontinence of urine, Dr. S. enumerates: mechanical causes, or organic changes operating injuriously upon the bladder, and functional derangements of the viscera. The first set of causes comprises all those cases which

depend upon the irritating presence of calculi in the bladder or upon the detrimental effects of organic disease of the bladder, prostate gland or urethra, or of some part in their immediate vicinity.

If the cause cannot be traced to some derangement of the bladder or of the contiguous parts, it may, perhaps, result from a general atonic condition of the system, causing a relaxation of the muscular fibres surrounding the neck of the bladder, while the muscular coat of the organ continues to contract with its ordinary degree of force, or it may be caused by some morbid visceral agency, which, by exciting occasional reflex spasmodic action of the longitudinal fibres of the bladder, causes involuntary expulsion of the urine, notwithstanding the sphincter muscle possesses its normal amount of power.

In addition to these causes, Dr. S. enumerates, paralysis from exposure to cold, or from injury to the spinal cord; the presence of worms in the rectum, especially the acarus or oxyuris vermicularis, or the existence in the bladder and kidneys of the cystic entozoa; the presence of undigested food in the alimentary canal; habitual costiveness; the use of improper and over-stimulating food and drinks, and various derangements of the digestive apparatus. Enuresis is, likewise, frequently observed in persons suffering from different diseases of the skin, especially certain of the exanthemata and vesiculae.

The predominance of the strumous, rheumatic, or gouty diathesis is frequently very conducive to the existence, or to the persistence of an attack of enuresis, especially the two latter in adults, and the former in children.

In the treatment of enuresis, there is scarcely a substance, whether included in the pharmacopœia or not, supposed to be possessed of tonic, alterative, astringent, or sedative properties, that has not been at some time or other vaunted to exert an almost specific action in controlling the disease. Belladonna, used internally and externally, catechu, kino, bistort, tormentil, gallic acid, cantharides, muriated tincture and other preparations of iron, nux vomica, strychnia, iodide and bromide of potassium, gum mastic, rhus radicans, copaiba, buchu, uva ursi, camphor, hyoscyamus, various preparations of opium, blisters to the sacrum, the application of galvanism, of cold, or of carbonic acid, etc. etc., have each, in turn, been praised as infallible or denounced as useless in this complaint.

This discrepancy may be accounted for, according to Dr. S., from the fact that practitioners, acting upon the strong recommendation of previous observers, have adopted a certain remedy or plan of treatment under wrong indications, or without first preparing the system for their favourable action.

It should not be overlooked, Dr. S. remarks, that the cure of enuresis will be greatly facilitated by certain moral and dietetic measures. Any bad habit, as that of not getting out of bed for the purpose of emptying the bladder at proper intervals, into which the patients, especially young children, may have fallen, either through indolence or fear, is to be counteracted, the quantity of fluid imbibed moderately restricted, particularly in the evening, and the usual diet selected from amongst articles of food which, while nutritious and easy of digestion, are unstimulating to the kidneys or to the bladder. Amongst the most objectionable articles may be enumerated hot liquids, especially tea, spices, pastry, salted and preserved meats, and most compound dishes.

The general remedial measures of sea-bathing, change of air, and exercise, will prove the most useful in atonic, strumous cases, but the patient, if old enough, should be debarred from horse exercise, which is apt to bring on the disorder in persons of a delicate organization, and when excessively indulged in, will frequently increase it and even render it intractable to medical treatment.

In respect to the various plans of local treatment which have been proposed, Dr. S. considers most of them to be unnecessary, and in many instances cruel. All mechanical restraints are particularly objectionable.

The best means of prevention is, perhaps, the establishment of a systematic plan of taking the child out of bed at regular intervals, so that the bladder may be kept from being overloaded by an accumulation of urine during the night.

Six cases are appended to the treatise of Dr. S. in illustration of the management of enuresis in the different circumstances under which it is liable to occur.

D. F. C.

ART. XX.—*Report of the Medical Missionary Society in China, for the year 1863.* 8vo. pp. 31. Hongkong, 1864.

SOME fifty years ago efforts were commenced by the several missionaries established in China by the Christians of the West, but chiefly, we believe, by the missionaries from the United States, to introduce into the then chief commercial city of the empire, for the advantage, more especially, of the poor and labouring classes, the plan of treatment for diseases and accidents pursued by the physicians and surgeons of Europe and America. It was a long time, however, before the prejudices, superstition, and exclusiveness of the governing and influential classes could be so far overcome as to allow of any systematic plan being carried out for shortening the duration, lessening the suffering, and diminishing the mortality among the sick of even the poorest classes in the community, by the enlightened skill of the physicians of foreign countries, or to secure, by the appliances of enlightened surgery, the lives, limbs, and usefulness of such as should have become injured in body or in limb.

Gradually, however, the advantages of Western skill in the saving of suffering and death in those submitted to its care became so very apparent that greater scope was allowed for its exercise; and even among the rich, the educated, and the distinguished classes of Chinese society the services of foreign and, in their eyes, barbarian medical and surgical practitioners were countenanced in the ailments and accidents of the labouring classes, and in occasional instances these services were had recourse to even for members of wealthy families.

About thirty years ago a hospital for the reception of patients was opened at Canton, which has been in regular operation, on a small scale, it is true, and with very imperfect accommodations, to the present day, except when interrupted by war. This hospital has done an immense amount of good to many thousands of the poor and toiling classes of the Chinese population, and has performed, also, no trifling part in the beneficent work of breaking down the wall of exclusion which for centuries has shut out from China all foreign intercourse.

Twenty-five years ago an organization was effected, under the name of the Medical Missionary Society of China, for the purpose of ministering more systematically and effectually to the wants and sufferings of the sick and disabled among the poor of Canton and such other parts of the country as they should be enabled to gain access to. At its annual meeting, in January of the present year, it took active measures for increasing the usefulness and efficiency of the hospital under its charge at Canton by enlarging and improving its accommodations.

Besides this hospital, the society have established a dispensary at Fuh-Shan, another at Shau-King; and another, at Shik-Lung, a large market town 40 miles east of Canton, on the East River, was opened in August, 1863. This last was established in connection with the Rhenish Missionary Society. The district of Tung-Kwang, of which Shik-Lung is the largest town, has been known as most hostile to foreigners, yet very little opposition was manifested, we are assured, to the opening of the dispensary. A comfortable house was obtained early in the summer, the rent of which is paid by the Rhenish Missionary Society.

From the report of the hospital at Canton, for 1863, we learn that the number of patients attended during the year was 14,628 at Canton, 5,445 at Fuh-Shan, and 1,730 at Shik-Lung. The number of children vaccinated was 1,494. The number of in-patients received was 452, and about 600 surgical operations were performed. Pecuniary assistance to the amount of \$75.55 was given to some of the most destitute in-patients and to some of those out of doors. The amount disbursed on account of hospital and dispensaries was \$1,376.34; from this, however, must be deducted a balance from last year of \$129.62, and the sum of \$87.34 received for medicines and trusses sold, leaving the sum of \$1,159.38, expended for rent, hire of assistants, medicines, aid to poor patients, etc.

The whole number of patients attended to at all the places was 21,803. The diseases with which the greater number of the patients were affected were those of the eye and skin, ulcerations, rheumatism, serofula, syphilis, bronchitis, dropsy,

dyspepsia, intermittent fever, etc. In addition to these, instances occurred of almost every other disease capable of assuming a chronic form.

Cholera, we are informed, prevailed more or less in Canton during six or seven months of 1863, and in various other parts of the province. The epidemic was a somewhat mild one; notwithstanding, the deaths were numerous, and many cases terminated fatally in a few hours. In a city like Canton, where in many parts cleanliness is not considered necessary either for health or comfort, it is a matter of surprise that an epidemic like cholera does not sweep off the inhabitants by thousands, and yet it is a fact that the close, narrow, and filthy streets suffered no more than such as are wide and clean. No part of the city is properly drained, and all the inhabitants are exposed alike to whatever poisonous emanations may be caused by the accumulation, in confined situations, of vegetable and animal substances in process of decomposition. There is certainly a great difference in the condition of the inhabitants as to ventilation and food, but it does not appear that the poor, in their crowded hovels, were more liable to the disease than the rich, whose houses were large and open, and whose diet was good and sufficient. Epidemic cholera in China, as in all other countries, has heretofore set at defiance all the rules of hygiene which seem to be so well established by reason and experience; pursuing its course and selecting its victims in a manner altogether inexplicable by those laws by which other epidemic diseases are governed.

The number of surgical operations performed at the hospital and dispensaries under the care of the Medical Missionary Society of China, during the year 1863, was much larger than in former years. Six hundred operations, including the minor ones performed on outdoor patients, are reported. The following are some of the most important: Lithotomy, 12; lithotrity, 1; cataract, 23; removal of dead bone, 16; extraction of bullets, 9; tumour of breast, 4. Only one fatal case occurred as the result of an operation. It was in an old man operated on for stone in the bladder.

Urinary Calculi.—Thirteen cases, as stated, were operated on during the year 1863; in all but one the lateral operation was performed. The excepted case was relieved by lithotrity. Eleven of the cases resulted in complete recovery. In the report a table is presented showing the principal facts of each case, including also four remaining from 1862. The table is a continuation of one published two years ago. Of the twenty-seven cases included in the former table, all were successful but two. Lithotrity was performed in two cases, and the lateral operation in the remainder. In four of the twenty-seven cases the patients were over fifty years of age, and six were under twenty years. Of the remaining seventeen cases, four of the patients were fifty years of age and over, one was forty-nine, and five were under twenty years, including two of thirteen.

A curious case of deformity of both hands and both feet is given. It occurred in a man thirty-one years of age, admitted into the hospital for incurable disease of the eyes, attended with nearly entire loss of sight. All the fingers except the thumb and little finger of both hands were wanting, with a similar deficiency of the toes between the great and little toe, in both feet. The metacarpal bones of the missing fingers were also wanting, with a similar deficiency in the metatarsal bones of the feet, except that the little toe of the right foot had two metatarsal bones. The wrist and ankle joints were perfect. Neither the parents nor three living sisters of this man were deformed.

A curious case is related of *hydatids of the kidneys*, in a man twenty-seven years of age, who sought relief from a urinary affection of which he had been the subject for about five years. His urine was as *white as milk*, and containing substances which resembled thick mucus, but, on examination, were found to be hydatids. They varied in number and size; sometimes but one or two, at others twenty, thirty, or forty would be discharged at once. They were generally so small as to be easily voided, but occasionally one would be so large as to obstruct the passage, and require straining for several hours before relief was obtained. Sometimes the urine continued for a few days or a month of its natural color and appearance, the hydatids being absent. Debility, loss of flesh, anxiety of countenance, etc., indicated a serious derangement of the general health of the patient.

D. F. C.

ART. XXI.—*On Poisoning by Diseased Pork. Being an Essay on Trichinosis, or Flesh-worm Disease: its prevention and cure.* By JULIUS ALTHAUS, M.D., M.R.C.P. Lond., Physician to the Royal Infirmary for Diseases of the Chest. London: John Churchill & Sons. 8vo. pp. 34.

THE reader will find in this Essay an excellent description of the trichina, illustrated by figures of the parasite in its different stages of development, with a history of the symptoms to which it gives rise when introduced into the human system, and the best modes of treating the morbid phenomena which it occasions, and, what is more important, the measures which should be adopted in order to protect from the trichinous infection.

We have so recently (see No. for April) given in our pages a full account of this parasite and of all the known epidemics of Trichinosis that we need not now recur to the subject, but we can recommend Dr. Althaus' Essay as furnishing an excellent exposition of the subject.

ART. XXII.—*A Manual of the Practice of Medicine.* By THOMAS HAWKES TANNER, M. D., F. L. S., etc. etc. From the last London edition, enlarged and improved. 12mo. pp. 699. Philadelphia: Lindsay & Blakiston. 1864.

MANUALS of either of the branches of medicine or its collateral sciences, accurately and skilfully prepared, may, perhaps, under certain circumstances, be useful to the student and young practitioner as remembrances of former studies. When, however, manuals and compends are relied upon as adequate exponents of the particular subject, the outlines of which they respectively present, they become, without doubt, impediments rather than helps to the acquisition of any useful or reliable kind or amount of knowledge. Now as this latter is unfortunately the use to which they are too commonly applied, we strongly incline to the opinion that it would be better to stamp with the seal of disapprobation all compends and manuals than to attempt the almost impracticable task of confining them to their very restricted sphere of usefulness.

As a mere manual we have no special fault to find with the volume before us. Dr. Turner has, with considerable ability, filled up and perfected the meagre and incomplete outline furnished in his first edition, so that, as far as the account now given by him of the "practice of medicine" extends, it presents a very concise outline of the present condition of our pathological and therapeutic knowledge, and delineates the leading features of diseases—with their causes, history, and treatment—by no means unskillfully, but only, as it were, in meagre outline.

D. F. C.

ART. XXIII.—*A Treatise on Gonorrhœa and Syphilis.* By SILAS DURKEE, M. D., Consulting Surgeon to the Boston City Hospital; Fellow of the Massachusetts Medical Society, &c. &c. Second edition, revised and enlarged. With eight colored illustrations. Philadelphia: Lindsay & Blakiston, 1864. 8vo. pp. 456.

THE first edition of this work was reviewed in the number of this journal for October, 1859. The changes in the present edition consist of some few and unimportant additions, of which the chapter on "Infantile Syphilis" has received the most. These additions do not alter the character of the work, nor justify our changing the opinion expressed in regard to it in our former notice.

W. F. A.

QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES
IN THE
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Introduction of Air into the Veins.*—M. ORÉ has recently experimented on this subject (*Gaz. Hebd.*, 1863, p. 33). He found, that, though an animal is inevitably killed by the introduction of a given quantity of atmospheric air, an equal and even greater amount of nitrogen, of hydrogen, or of carbonic acid, may be injected with impunity into another animal of the same weight and race. Oxygen may be introduced in almost any amount. An animal which would have been unable to bear 80 cubic centimetres of air scarcely suffered from the introduction of 300 cubic centimetres of oxygen. Death may be prevented by the use of electrical currents in such a way as to provoke energetic respiratory movements, even when a quantity of air is injected otherwise sufficient to at once destroy the animal. The author attributes death partly to distension of the right side of the heart, partly to paralysis of the muscular tissue of that organ, caused, as he supposes, by a sedative action of the air; he employs electrical irritation of the pneumogastrics, with the view of preventing the latter effect, imagining that dilatation of the chest would to some extent remove the air from the heart. A. Mercier (*ib.*, p. 321) does not admit this explanation; the *vis a tergo* necessary to drive in the air with sufficient force to cause mechanical distension of the heart does not exist; and as to the idea of a paralysis caused by the air, it is well known that the heart of an animal will beat for a considerable period after its removal from the chest. Mercier published in 1837 and 1838 (*Gaz. Méd.*), and has since repeated, an explanation which appears to agree better with the facts. Death from the injection of air or any other gas occurs with rapidity, because the pulmonary circulation is interrupted, because the brain is not supplied with blood; indeed, the condition is just such as would be induced by a prolonged syncope. This interruption occurs, not because the heart is distended or unable to contract, but because the frothy mixture on which it acts does not obey its efforts, but passes with great difficulty, or not at all, through the capillaries of the pulmonary artery. Such a difficulty, indeed, results, first, because the gaseous molecules have little affinity for the walls of the capillaries. It is a fact perfectly established in physical science that the passage of a liquid through very delicate tubes is rendered more difficult by its mixture with a gas. Secondly, because the impulse caused by the contraction of the heart is only very partially transmitted to the more remote ramifications of the pulmonary artery, owing to the compressibility and elasticity of the gas. Thirdly, because at the moment of a contraction, the valves are not so exactly closed by a gas as by an incompressible liquid: and for that very reason a reflux takes place with greater ease from the ventricle into the auricle, and from the latter into the veins. The author has found in the inferior vena cava air which had entered spontaneously by the superior. It is also possible that the viscous con-

dition of the blood is increased or diminished by particular gases. In accordance with his theory, he considers that if death takes place, as in a prolonged syncope, because the brain is too long without the necessary amount of blood, it would, perhaps, be possible to delay this termination till the heart could liberate itself, provided the whole of what little blood passes through the left side of the heart, notwithstanding the obstruction, could be carried to the brain. For this purpose he recommends: 1. To keep the head low: the experiments related in Bouillaud's report prove, indeed, that animals die with greater rapidity when the head is elevated. 2. To compress the axillary arteries and the abdominal aorta, or in case of need, the femorals. A dog, into whose heart he had passed a considerable quantity of air, passed four times from death to life, and from life to death, according as he pressed or not on the aorta (one axillary artery had been ligatured); it ultimately recovered (*Gaz. Méd.*, 1838). He considers that electricity facilitates the circulation in the lungs, and should therefore be used when at hand.—*The New Sydenham Society's Year-Book*, for 1863.

2. *Physiological and Therapeutical Action of Oxygen on Animals.*—DEMARQUAY and LACONTE have made a series of observations on the physiological action of oxygen on dogs. They found that these animals were capable of respiration for a long period of time without other apparent effect than increased liveliness and augmented appetite. They then made extensive wounds in the axillæ of the animals, and observed: 1. That the wound became considerably congested; 2. That a flow of transparent serosity took place from the injured surface; 3. That, after long exposure to the gas, numerous petechiae or small ecchymoses made their appearance; and 4. Closely similar effects were observed when oxygen was directly injected into the blood. The injection of the gas into the veins requires to be undertaken with care; but it was found that nearly two quarts could be injected without killing the animal, if it were introduced through the vena porta or through the vena cava below the liver: the venous blood in these instances did not appear altered in colour, the spleen alone, as though it were a blood-gland (an organ of haematosis), acquired a scarlet tint. All the abdominal veins became turgid, the increase in the quantity of the blood in these parts, obviously resulting from the experiment. In other experiments made on rabbits, it was found: 1. That these animals could live from fourteen to seventeen hours in pure oxygen; 2. That when death occurred, the muscular system was universally engorged with blood, and had assumed a peculiar rosy tint; 3. That the ordinary difference in colour between arterial and venous blood, contrary to the opinion of Bronghton, was perfectly well marked; and 4. That in opposition to the statements of Beddoes, no organ was found inflamed or gangrenous.

On applying oxygen gas to wounds in the human subject, no acute pain was perceived, but pricking and heat were complained of. When the gas was injected into the mucous or serous cavities the same sensations were produced. In one instance it effected the radical cure of hydrocele. When placed in contact with healthy wounds, the suppurative process becomes modified, the purulent discharge in a few hours becoming less abundant and thinner, the granulations smaller and grayer in tint; but on the removal of the oxygen they assume a bright colour, and if it be applied several hours in the same day it may induce acute inflammation. It rapidly modifies and removes the inflammatory circle of redness which surrounds ulcers, eczema, &c. Oxygen, when respired by man to the extent of twenty-nine or thirty quarts, produces little effect. Various sick persons in these experiments derived benefit from such a dose daily repeated; they perceived sometimes a little heat in the pharynx, and a little confusion in the head, or headache: the pulse usually rose a little in frequency and force, but sometimes fell; the appetite improved, and there was a general sense of comfort and of increased energy. It does not appear to suit those greatly exhausted by suppurating wounds, or those in the later stages of phthisis.—*Brit. and For. Med.-Chir. Rev.*, from *Comptes Rendus*, vol. i. 1864.

MATERIA MEDICA AND PHARMACY.

3. Abstract of the Report of the Committee on Chloroform, made to the Royal Medical and Chirurgical Society, July 4, 1864.—In laying their report before the Council of the Medical and Chirurgical Society, the Committee on Chloroform desire to state that they have made comparatively little reference to the medical portion of the subject. This is not due to their thinking the medical uses of chloroform of little importance, but to the fact that but few replies to their inquiries upon this point have been received.

In view of the great extent of the subject submitted to their consideration, the committee directed their attention to such points as appeared to them of chief practical importance. Thus their observations respecting the action of chloroform on the nervous system, and their remarks on some other points, are less full than would have been desirable had the committee regarded such details as of equal importance with those specially elected for investigation—such as its influence on the action of the heart and on respiration.

The committee have chiefly confined their physiological report to observations which they have themselves made. Without overlooking or neglecting the labours of former investigators, they have endeavoured rather to furnish an accurate account of experiments which they have observed carefully and together, and to compare the results thus obtained and agreed upon with the phenomena of cases in which death or peril of life has arisen from the inhalation of chloroform in the human subject.

Physiological Conclusions.—The sequence of the phenomena produced by chloroform inhalation in animals is similar to that observed in man, and if the same percentage of the agent be administered, the results produced are nearly uniform. The first effect of chloroform vapour is to increase the force of the heart's action; but this effect is slight and transient, for when complete anaesthesia is produced, the heart in all cases acts with less than its natural force. The strongest doses of chloroform vapour, when admitted freely into the lungs, destroy animal life by arresting the action of the heart; whilst by moderate doses the heart's action is much weakened for some time before death ensues, respiration generally, but not invariably, ceasing before the action of the heart, death being due both to the failure of the heart's action and to that of the respiratory function. The danger attending the use of chloroform increases with the degree of stupor it induces; the apparent irregularities in the action of the anaesthetic mainly depending on the varying strength of the vapour employed, on the quality of the chloroform, and on the constitution of the patient. In order that it may be administered with comparative safety, it is necessary that the proportion of vapour should not exceed $3\frac{1}{2}$ per cent.; that its effects should be carefully watched, and the inhalation suspended when the required anaesthesia is induced.

In many respects the action of ether is similar to that of dilute chloroform. At first its vapour increases the force of the heart's action—an effect which is both greater and of longer duration than that observed with chloroform. The stimulation is followed by a depression of the force of the heart's action, but at the same degree of insensibility ether does not depress the action of the heart to the same extent as chloroform. Eventually ether kills partly by enfeebling the action of the heart, but chiefly by arresting the movements of respiration. Thus the energy with which chloroform acts, and the extent to which it depresses the force of the heart's action, render it necessary to exercise great caution in its administration, and suggest the expediency of searching for other less objectionable anaesthetics. Ether is slow and uncertain in its action, though it is capable of producing the requisite insensibility, and is less dangerous in its operation than chloroform. On the whole, however, the committee concur in the general opinion which in this country has led to the disuse of ether as an inconvenient anaesthetic.

A mixture of ether and chloroform is as effective as pure chloroform, and a safer agent when deep and prolonged anaesthesia is to be induced; though slow

in its action, it is sufficiently rapid in its operation to be convenient for general use. A mixture composed of three parts of ether, two parts of chloroform, and one part of alcohol (by measure), is to be preferred on account of the uniform blending of the ether and chloroform when combined with alcohol, and the equable escape of the constituents in vapour; and the committee suggest that it should be more extensively tried than it has hitherto been in this country.

Effects of Chloroform on the Fauces.—The sudden administration by the mouth of concentrated chloroform vapour induces a spasm of the fauces, which lasts for some seconds; afterwards, when the animal has inspired, the phenomena of asphyxia are for a time associated with those of chloroform poisoning, and death is finally induced as by dilute chloroform. If, however, partial insensibility is first induced by weaker chloroform, no spasm of the fauces ensues upon the sudden administration of the concentrated form of the agent.

Post-mortem Appearances.—Judging from the observations on animals—the appearances in the human subject having been noticed in but few cases, and being insufficient for yielding satisfactory conclusions—it appears that though there may in certain cases be an impediment to the free circulation of the blood through the lungs, yet the appearances are very different after death has been caused by chloroform from those observed when life has been destroyed by asphyxia. In death from chloroform, all the cavities of the heart are distended, and the cases are only exceptional in which the left side is empty. The rule, however, is alike in both—that the cavities of the right side contain more blood than those of the left.

Resuscitation.—The most certain means of restoring life after poisoning with anaesthetics is by artificial respiration. By this means resuscitation may generally be accomplished after natural respiration has ceased, provided the heart continues to act, and it may *sometimes* be effected even after the cessation of the heart's action; but this result is exceptional. Galvanism resuscitates within the same limits as artificial respiration; it is, however, far less to be relied on than artificial respiration in equal cases. With either remedy it is found that animals quickly rendered insensible by a strong dose are more easily recovered than those which have been gradually narcotized even by a small percentage of the anaesthetic.

Rules relating to the Administration of Chloroform.—The anaesthetic should on no account be given carelessly, or by the inexperienced; and when complete insensibility is desired, the attention of its administrator should be exclusively confined to the duty he has undertaken.

Under no circumstances is it desirable for a person to give chloroform to himself.

It is not advisable to give an anaesthetic after a long fast, or soon after a meal; the best time for its administration being three or four hours after food has been taken.

If the patient is much depressed, there is no objection to his taking a small quantity of brandy, wine, or ammonia, before commencing the inhalation.

Provision for the free admission of air during the patient's narcotism is absolutely necessary.

The recumbent position of the patient is preferable: the prone position is inconvenient to the administrator, but entails no extra danger. In the erect or sitting posture there is danger from syncope. Sudden elevation or turning of the body should be avoided.

An apparatus is not essential to safety if due care be taken in giving the chloroform. Free admixture of air with the anaesthetic is of the first importance, and, guaranteeing this, any apparatus may be employed. If lint, or a handkerchief, or a napkin is used, it should be folded as an open cone, or held an inch or an inch and a half from the face.

The anaesthetic should invariably be given slowly. Sudden increase of the strength of the anaesthetic is most dangerous. Three and a half per cent, is the average amount, and four and a half per cent with ninety-five and a half of atmospheric air is the maximum of the anaesthetic which can be required. Given cautiously at first, the quantity, within this limit, should be slowly increased

according to the necessities of the case, the administrator being guided more by its effect on the patient than by the amount exhibited.

The administrator should watch the respiration of his patient, and should keep one hand free for careful observation of the pulse.

The patient who appears likely to vomit whilst beginning to inhale the anaesthetic should be at once brought fully under its influence, and the tendency to sickness will then cease.

The occurrence during the administration of an anaesthetic of sudden pallor or of sudden lividity of the patient's countenance, or sudden failure or flickering of the pulse, or feeble or shallow respirations, indicates danger, and necessitates immediate withdrawal of the anaesthetic until such symptoms have disappeared. On the occurrence of these symptoms, and especially if they should become so urgent as to threaten death from failure of respiration, of heart-action, or of both together, the following rules of treatment are to be observed: Allow free access of fresh air; pull forward the tongue, and clear the mouth and fauces; keep or place the patient recumbent; dash cold water on the face and chest, and aid the respiratory movements by rhythmical compression of the thorax. In the more threatening cases artificial respiration must be commenced instantly; and this rule applies equally in all cases, whether the respiration has failed alone, or the pulse and respiration together. Galvanism may be used in addition to artificial respiration, but the artificial respiration is on no account to be delayed or suspended in order that galvanism may be tried.

Few if any persons are unsusceptible of the influence of chloroform, from two to ten minutes being required to induce anaesthesia. The time, however, varies with age, temperament, and habits.

The mixture of chloroform, ether, and alcohol should be given in the same way as chloroform alone; care being taken, when lint or a handkerchief is used, to prevent the too free escape of the vapour.

Use of Chloroform in Surgical Operations.—With heart-disease the anaesthetic may be given in any case which requires an operation, although when there is evidence of a fatty, weak, or dilated heart, great caution is demanded. Valvular disease is of less importance.

In phthisis, when an operation is unavoidable, the anaesthetic may be given with impunity.

For all operations upon the jaws and teeth, the lips, cheeks, and tongue, the anaesthetic may be inhaled with ordinary safety. By care and good management the patient may be kept under its influence to the completion of the operation. In these cases, blood, as it escapes, if not voided by the mouth, passes into the pharynx. If any small quantity finds its way through the larynx, it is readily expelled by coughing. In operations upon the soft palate, fauces, pharynx, and posterior nares, if sudden or severe hemorrhage is likely to occur, it is not advisable to induce deep insensibility.

In cases requiring laryngotomy and tracheotomy the anaesthetic may be employed with safety and advantage.

For operations upon the eye, involving the contents of the globe, the use of anaesthetics is open to objection on account of the damage which the eye may sustain from muscular straining or vomiting. If employed, profound insensibility should be induced.

In operations for hernia, and in the application of the taxis, the anaesthetic acts most beneficially. For most operations about the anus profound anaesthesia is positively demanded.

In the condition of shock, or of great depression, as after hemorrhage, careful administration of the anaesthetic diminishes the risk of an operation.

In all cases, other than those specially referred to, it is sufficient to state, so far as a mere surgical operation is concerned, that an anaesthetic may invariably be administered.

The continuous vomiting occasionally induced by and following upon the inhalation of anaesthetics, may be injurious by consequent exhaustion, as well as by mechanically disturbing the repair of a wound. With this reservation they do not appear to interfere with the recovery of patients from surgical operations.

Statistics.—The results of 2586 capital operations performed before, and of

1860 performed since, the introduction of anaesthetics, collected from all authentic available sources,¹ prove that anaesthetics have in no degree increased the rate of mortality.

Use of Chloroform in Obstetric Practice. (a) In natural labour.—The careful administration of chloroform during labour is not attended with special danger, there being, either in this country or abroad, so far as is known to this committee, no well-authenticated instance of sudden death where it has been given by a medical practitioner; but the occasional occurrence of unfavourable symptoms demands the exercise of caution during its employment. Administered in a moderate degree, it does not, as a rule, weaken the expulsive powers, and is decidedly beneficial in promoting dilatation of the maternal passages. It does not predispose to puerperal convulsions or other like complications. The balance of opinion is nearly equal as to whether it predisposes to imperfect contraction of the uterus after delivery. As a rule, it in no way retards the convalescence of the mother; nor has it any tendency to interfere injuriously with the function of lactation; nor has it any injurious influence on the child.

(b) In abnormal labour.—The anaesthetic may be employed with advantage in various obstetrical operations—as forceps, turning, craniotomy, and extraction of retained placenta—unless the patient is much enfeebled by hemorrhage; when, if given, it ought to be accompanied by the use of stimulants. It may also be employed advantageously to check the paroxysms in puerperal convulsions.

(c) As to the preference of ether. Rules relating to the administration of chloroform.—There are no reasons for giving preference to ether over chloroform, the latter being much more desirable in obstetrical practice generally, the only exceptions being those in which chloroform notably disagrees.

In addition to those given for administration in ordinary cases, it is generally desirable to observe the following rules during its administration in labour, subject to modifications at the discretion of the practitioner: In natural labour, begin to give it generally at or after the termination of the first stage; but it may be given earlier if the first stage is unduly painful, or if the os uteri resists dilatation. Give it only during the pains, and withdraw it in the intervals. When the fetal head bears on the perineum, give it more freely to promote relaxation and relieve the increased pain. Withdraw the chloroform immediately after the child is expelled. If the patient is depressed or the pains are sluggish during its administration, an occasional stimulant may be administered. In cases where it seems to interfere with the progress of labour it may be necessary to suspend its use for a time, and reapply it after an interval, or even to withdraw it altogether. In turning and instrumental deliveries deep anaesthesia must be induced, as in surgical operations, and the administration should then be intrusted to a competent person, whose sole duty should be to attend to it. In midwifery a special inhaler for its administration is not generally necessary or desirable, a handkerchief or towel, so folded as to prevent blistering of the face and to allow free admixture of atmospheric air, being sufficient for the purpose.

(d) Use of chloroform in diseases of women and children.—In the treatment of diseases of women, chloroform may be employed to facilitate and lessen the pain of certain examinations. In cases of spurious pregnancy and phantom tumours, by relaxing the abdominal parietes, it may assist in demonstrating their true characters; and, acting in the same way, it may help the practitioner to define more accurately the character and relations of other abdominal and pelvic tumours, or to detect feigned disease.

As a therapeutic agent, its inhalation, and external application in the form of a liniment, may be usefully employed to allay pain in some cases of severe dysmenorrhœa, neuralgia, and the like.

There is accumulated testimony in favour of chloroform inhalation proving serviceable in various spasmodic diseases of women and children: as whooping-cough complicated with convulsions, spasmodic croup, epileptic seizures and

¹ Appendix D to the Report.

some other forms of convulsions in children; hysterical convulsions, epilepsy, and various muscular contractions in women.—*Med. Times and Gaz.*, July 16, 1864.

4. *Action of Bromide of Potassium.*—In our last number (p. 219), we noticed the statement of Dr. H. Behrend as to the effect of this salt in insomnia and restlessness, dependent upon nervous irritability; and this statement is confirmed by Dr. S. W. D. WILLIAMS, House-Surgeon to the General Lunatic Asylum, Northampton, who says that he has tried the medicine during the first five months of this year, in 37 epileptic cases, all of which were also more or less insane. All the patients but 11 were more or less benefited, but none were entirely cured.

Dr. Williams has not the same confidence in recommending, as Dr. B. does, the unfettered use of half-drachm doses; for, he says, in several of the cases "it was found necessary to reduce even the average—ten grains twice daily; and in the majority the first use of the drug was accompanied by sickness and lassitude.

"Those patients on whom the drug seemed to take the most effect in this way were seven in number; after using it for a few days the action of their hearts became slow and fluttering, the eye lost its lustre, the skin was cold and clammy; they had a wearied, anxious look, and complained of headache, and sickness, and shivering, and of unusual weakness at the knees, and invariably sat crouched up by the fireside all day, evidently devoid of all energy and resolution. Curiously enough, in all the cases thus powerfully affected the fits were increased instead of diminished.

"The drug excited hypercatharsis in two patients, which was repeated again and again each time it was renewed; the fits in both these cases were diminished; in the case of the female, from 41 to 22.

"One patient, S. A., was apparently, five months ago, one of the most healthy persons in the home—fat, strong, and rosy; but soon after taking the bromide, the peculiar symptoms described above developed themselves, and the medicine was immediately omitted; but, although she rallied a little, her system never thoroughly recovered itself: tubercles became developed in the lungs, and she died towards the end of April. Truth compels me to confess that I have my doubts whether the bromide of potassium had not something to do with this poor girl's death—at all events, this occurrence has made me very watchful when using it.

"On the other hand, considerable benefit has arisen from its use in some cases; it undoubtedly exercises a most powerful influence on the nervous system, and often soothes the irritability of epilepsy, even if it does not diminish the frequency of the fits, when no other medicine will take any effect, and in this way will be found a most valuable adjunct to the repertory of an asylum Dispensary. I cannot think that it has much effect, however, on the sexual system; for in some cases where it was used more especially with that view, there was no apparent result, but of its powers in inducing sleep in cases dependent on nervous irritability there can be no doubt, and often from ten to twenty grains twice daily will suffice to effect this."—*Med. Times and Gaz.*, July 23, 1864.

5. *Diuretic Properties of the Clematis.*—We have largely employed during several years past the seeds of the wild clematis (*Clematis vitalba*, a plant which is indigenous to England, known by the common name of "Traveller's Joy.") as a diuretic, and in a great proportion of cases we have obtained very satisfactory results. These seeds, which are scarcely used in Belgium, are well known and much appreciated in Holland, where many practitioners prescribe it in the treatment of dropsy, and speak highly of its value. Our first trial of this remedy was in 1858, in the following case of anasarca consequent upon Bright's disease of the kidneys:—

P—. 38 years of age, a carriage-builder's workman, was admitted into the Bavière Hospital, under M. Sauveur, having every symptom of chronic albuminuria—viz., a large quantity of albumen in the urine, general anasarca, dimness

of vision, and incipient hypertrophy of the left ventricle, without valvular lesion' which condition, as has been shown by M. Traube, is always a result of morbid alterations of the kidneys. Digitalis was first administered, and afterwards purgatives, which diminished the effusion to a slight extent, but they produced an attack of diarrhoea which weakened the patient so much that it was requisite to discontinue them. At this stage Professor Sauveur ordered the infusion of clematis seeds to be taken. The effects of this remedy were very remarkable; copious diuresis was established, the quantity of albumen became less every day, and the dropsy was soon entirely removed.

We had recourse to the same treatment shortly after this, with equal success, in a case of albuminuria occurring in a man who was also the subject of inveterate syphilis, and in whom Bright's disease of the kidneys, apparently following upon amyloid degeneration of those organs, had reached its last stage; the effusion was very considerable, and all treatment which had been adopted had proved unavailing. The infusion of clematis seeds, which was given by itself, removed the anasarca after a few days' time. In the case of this man, the medicine increased the quantity of urine to a singular extent; but was reduced to its normal quantity within one day after the patient had discontinued taking it. When he left the hospital, the albumen, which had been very excessive for some time, was greatly diminished in amount. It is unnecessary to multiply examples, and we shall therefore only add, that since we had under treatment these two cases which have been detailed, we have prescribed this remedy in all forms of dropsy, whether dependent upon renal disorder or affections of the abdominal viscera, and that we have almost always found it to be successful.—*Medical Mirror*, from *Ann. de la Soc. Méd.-Chir. de Liège*.

6. *Effects of the Excessive Use of Sugar on the System.*—Dr. CHAMPOUILLOX communicated the result of his observations on the effects of the excessive use of sugar on the system. So far back as the year 1846, the author undertook a series of experiments on himself, in order to supply the Minister of War with information as to the possibility of replacing salt by sugar in the preparation of the preserved meat destined for the use of the army during a campaign. In accordance with his instructions, M. Champouillon strictly confined himself to the diet which may be accidentally enforced on the garrison of a besieged city by the hardships of war, and for several days in succession lived on the following rations: sixteen ounces of beef preserved in sugar, and four ounces of biscuit; water was his only beverage. Various phenomena supervened in the following order: thirst, sinking at the stomach, distaste for food, nausea, acid regurgitation, epigastric pain, diarrhoea, prostration, and syncope.

"I carefully watched these symptoms," says M. Champouillon, "and the loss of appetite and nausea indubitably proceeded from the absence of variety in my diet; whereas the thirst, heartburn, epigastric pain and diarrhoea were as clearly referable to the difficulty of digesting cane sugar. In proportion to the impression produced by this substance on the organs of taste, it clogs the palate and destroys natural appetite. This excessive indulgence in syrups, sweet-meats, pastes, and highly-sweetened diet-drinks, brings on distaste for food, and annihilates the digestive powers, especially in cases of pulmonary consumption. After expatiating on the transformation of cane-sugar into glucose, in consequence of its contact with the acids contained in the gastric juice, and on the injury caused by the increased activity imparted to the functions of the stomach by frequent repetition of the process, M. Champouillon showed that in addition to the inflammatory congestion thus occasioned glucose powerfully contributes to the establishment of a plethoric condition of the system, and that the prevalent opinion that the excessive use of sugar tends to cause pulmonary irritation and a disposition to atrophy, is but too well justified by facts. In support of this view, the author adduced two interesting cases, one of apoplexy, the other of haemoptysis, in which the agency of this cause was distinctly evident.

"I have often remarked," said he, "in thirty-three years' experience of tubercular disease, that the cough, hectic fever, and night-sweats are increased by the fondness of the patients for sweet substances. I conceive this to be the natural consequence of the combustion of the glucose in the system, a phenomenon which

necessarily implies the production of water, carbonic acid, and heat. It is a well-known fact that three and a half ounces of sugar consumed in the human body evolve an amount of heat equivalent to what might be produced by the combustion of thirty-two grains of charcoal. MM. Favrot and Silberman have shown that fifteen grains of charcoal are sufficient to impart one degree (cent.) of heat, eight kilogrammes, or sixteen pounds of water. If the capacity of the human body for caloric is the same as that of water, three ounces and a half of sugar will, in a subject weighing seventy-five kilogrammes ($12\frac{1}{2}$ st.), raise during their combustion the temperature of the body four degrees and a half (centigr.).

The practical conclusion of this paper is that it is desirable to reduce within as narrow limits as possible the consumption of sugar, especially in cases of tuberculosis, and to replace that substance by honey, or a decoction of liquorice.—*Dublin Med. Press*, Feb. 24, 1864, from *Journ. de Méd. et Chirurg.*

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

7. *Heat Apoplexy*.—Dr. J. BONNYMAN, Assistant Surgeon 89th Regiment, makes (*Edinburgh Med. Journ.*, May, 1864) some interesting remarks on this little understood affection.

"Heat apoplexy," says Dr. B., "or, as it is frequently denominated, *sunstroke*, is essentially a disorder of warm climates. It is common to both the white and the coloured races of mankind; but, as will be seen hereafter, the former are more prone to its attack than the latter, and though the male sex is more obnoxious to it than the female, yet the latter not unfrequently fall victims to it. Age does not appear to exert much influence in its causation, for it is met with at ages varying from five to fifty years; nor does it attack the weakly and spare in preference to the strong and robust, both being equally liable to its invasion. The only condition that is invariably present during its prevalence is a high atmospheric temperature. Moisture and dryness appear to be little concerned in its production, for, in most parts of India, during May and the first half of June, the atmosphere is hot and dry, and then heat apoplexy is more rife than at any other season. On the occurrence of the rains towards the end of June, and during July and August, when the temperature falls, it becomes rare, again appearing, but for the most part to a less extent, during the months of September and October, when the air has again become hot, but now loaded with moisture. During the summer of 1860, in consequence of the lateness of the coming on of the rains, the hot season was of longer duration and more severe than usual, and, accordingly, in very hot stations, like that of Jhansie, heat apoplexy was of very frequent occurrence up to the end of July. * * *

"Though direct exposure to a burning sun may undoubtedly occasion an attack, yet this is by no means an essential condition. By far the greater number of cases that yearly occur in India are those of men who have not been so exposed. It is not unusual for men who go to bed in apparent health to be seized during the night, and patients in hospital, who have been confined to bed for days previously, are frequently the subjects of attack. Great atmospheric heat, then, appears to be the condition chiefly concerned in the production of the malady, and whatever assists in rendering heat oppressive, as stillness and closeness of the air, overcrowding and deficient ventilation, assists also in disposing to a seizure.

"The predisposing causes are not very evident; the principal may be said to be those of a debilitating nature, as, mental depression, anxiety, great bodily exertion, fatigue, intemperance suppressed perspiration, and existing disease, particularly in any of the depurating organs. Those who have a constitutional tendency to cerebral disorder, or to derangement or irregular circulation of the blood within the head, are also probably more liable to be affected.

"The disease is sometimes preceded for a few hours, or even days, by a feeling

of general uneasiness, or by symptoms referable to the head; but it often comes on suddenly without any warning, the patient being seized with loss of consciousness, sensation, and voluntary motion, breathing stertorously, and expiring in ten or fifteen minutes."

"Relapses," according to Dr. B., are frequent. "Those who recover from the more dangerous symptoms require for some time afterwards to be frequently seen and carefully watched, as sleep may come on, and the symptoms recurring, the disease may have advanced too far before attention is directed to the patient's state.

"The appearances after death," says Dr. B., "observed in those who have died of heat apoplexy, without any complication or co-existent disease, are pretty constant and unvarying. Irregular patches, of a livid red colour, are seen scattered over the whole external surface of the body; those over the neck and dependent parts being large, while those on the anterior surface are smaller and more numerous. These blotches not unfrequently begin to form before life is extinct. Rigidity of the muscles is slight or absent, but this is probably due to *rigor mortis* being incomplete at the time of examination, in consequence of the short time that in hot countries is allowed to elapse between the occurrence of death and the period of sepulture. The features are generally natural, face pale, eyes bright, pupils dilated. Froth, occasionally mixed with blood, is seen about the mouth and nostrils. The abdomen sometimes becomes much inflated soon after death, and the whole body retains the animal heat for a long time. On opening the head, the encephalon and its membranes are found congested, and the veins and sinuses full of dark blood. A quantity of clear serum is generally discovered at the base of the brain. The cerebrum and cerebellum, on being cut into, exhibit many vascular points, but in other respects they are, for the most part, firm and healthy. The lateral ventricles are found full of a clear serum, and the choroid plexuses are generally pale and shrivelled. The lungs are gorged with dark blood, and the bronchi filled with frothy mucus. The right side of the heart generally contains fluid or semifluid blood, and the left side is empty. The liver, spleen, and kidneys partake of the general congestion. The blood throughout the body is of a dark colour and fluid, a great quantity of it draining from the head during the examination of the brain."

The disease occurring only when a high temperature prevails for a prolonged and continuous period, we are naturally led, says Dr. B., "in attempting to ascertain its origin and nature, to inquire in what manner animal life is affected by great heat; what organs are thereby influenced; what functions undergo increase, and what decay. The usual effects of increased atmospheric heat are, augmented cutaneous transpiration, diminished excretion of urine, thirst, languor, depression, and accelerated circulation. Besides these effects, however, Crawford, Prout, Copland, and other observers have found, that, during elevated temperatures, the blood, in the process of respiration, does not undergo the usual changes.

"It has been shown that, when high ranges of temperature prevail, the blood undergoes imperfect purification in the lungs; and in enumerating the symptoms of heat apoplexy, the skin was described as hot and dry—hotter and drier than in perhaps any other known affection—the urine as nearly suppressed, and the bowels as constipated. From this it is manifest, that in this disease not only do the other emunctories not make up by an increase in their functions for the deficient respiratory changes, but that they themselves also cease, in a great measure, to perform their depuratory office. And when it is borne in mind how absolutely necessary, for the welfare of the body, and even for the existence of life, the proper performance of the functions are, it cannot be matter of surprise that, on the interruption of functions of so many important organs, as the lungs, kidneys, skin, and intestines, disease of a grave character should result. That the retention in the system of matters that ought to be eliminated is intimately concerned in the production of the disease, is further demonstrated by the large quantities of black morbid matters that continue, for some time afterwards, to be evacuated from the bowels of those who recover from the malady. * * *

"In the advanced stage of heat apoplexy, it has been shown that all the depurating organs cease to act; but the order of cessation in the different functions

has not been observed. As, however, the experiments of Dr. E. Smith prove that the higher the temperature of the atmosphere rises, the less becomes the amount of carbonic acid exhaled by the lungs, it is probable that the blood first undergoes alteration, and that almost simultaneously with the blood, the organic nervous system becomes affected. Thus the blood is changed, and the functions of organic life are impaired from the outset of the disorder."

In the treatment of heat apoplexy, Dr. B. thinks that the "principal object to be kept in view is the re-establishment of the excreting functions. If the case be not very urgent, that is, if the patient be sensible and coma be not threatening, stimulants, as ammonia or brandy, in small quantities, may be administered. The affusion of cold water to the head and chest ought to be assiduously employed till the preternatural heat of the surface of the body has disappeared. Purgative enemata ought to be used, and free action of the bowels obtained as soon as possible. Diuretics and diaphoretics ought also to be prescribed. Chlorate of potash in water, or oxygenated water, may be employed as an ordinary drink, and the patient ought to be placed in a large room well supplied with pure and cool air. If the case be more advanced, and danger imminent, then not a minute is to be lost. The patient is to be at once removed into a large room, or, if the case occur at night, into the open air, where he ought to be stripped naked, and placed on his back on a cot, with his head slightly elevated. Cold water in a full stream is then to be poured from a height of about two feet on the head and chest. The extremities are at the same time to be well rubbed, and the arms may be alternately raised and depressed, as in the employment of artificial respiration. Enemata of cold water, or of salt and water, may be thrown up, and sinapisms applied over the epigastrium and abdomen. Small quantities of brandy are, from time to time, to be given, care being taken not to choke the patient, deglutition being slow and difficult. In the employment of the cold affusion, the following practice may be followed: Let the stream of water fall for about half a minute on the head and chest, and then be interrupted for a few seconds, when it is to be again allowed to fall on the head and chest for an equal length of time as before, followed by a similar interval of cessation, and so on, till the surface of the body is reduced to the natural temperature. Care must be taken not to employ the cold affusion too long or too uninterruptedly, otherwise great depression will be produced by the cold, and recovery prevented. The patient is now to be well dried, put to bed, and lightly covered with bedclothes, the head being kept somewhat elevated. The effects of stimulants are to be watched, and they are to be continued, if necessary. If the heat of skin return, or if the head become hot, the cold affusion must at once be had recourse to. These measures ought to be persevered in for a long time, for apparently hopeless cases sometimes recover. Amelioration is shown by the disappearance of stertor, and by deeper and more regular respiration. The immediately dangerous symptoms being got rid of, if the hair of the head has not been already removed, it ought now to be cut short, and a blister applied to the nape of the neck; action of the bowels ought to be solicited, and free perspiration encouraged. Venesection ought never to be practised. If reaction set in rather strongly, and headache be much complained of, a few leeches may be applied to the temples, or what is preferable, blisters may be applied to the back of the neck or to the sides of the head. Patients who recover require careful watching and attendance till all the functions of the different organs have been completely restored.

"During convalescence the attention must be directed to the regulation of the secretions and excretions. For this purpose tonics and aperients will chiefly be required. The skin must be kept clean and warm, and bathing in tepid or cold water daily practised. The diet ought to be moderate in quantity, and consist of nourishing, non-heating, and easily digestible food. Every means to impart tone and vigour to the body should be employed."

8. *Chemosis of the Conjunctiva as a Symptom of Suppurating Meningitis.*
—Dr. LEYDEN wishes to draw the attention of the profession to this circumstance, as within a short time he has met with three cases in which chemo-

sis of the conjunctiva constituted a very distinct phenomenon, all the other structures of the eye retaining their complete integrity.—*Med. Times and Gaz.*, Aug. 13, 1864, from *Virchow's Archiv.*, Vol. 29, No. 1.

9. *Pain in the Knee-Joint as a Symptom of Meningitis.*—Dr. LUND called the attention of the members of the Norwegian Medical Society, at a meeting held 25th November, 1863, to a phenomenon which he has sometimes observed in children suffering from meningitis, and which he regards as having a bearing on the diagnosis of this disease. “The first time,” he says, “my attention was drawn to this symptom was sixteen or seventeen years ago, when a girl, aged about nine years, who, after supposed exposure to cold, was attacked with violent pain in the right knee-joint, on examination of which nothing could be discovered, came under my care. The pain was increased on any attempt to move the joint; there was no pain in the hip-joint or in any other part of the extremity, but there was some fever and general disturbance. A brother of the patient had some time previously died of inflammation of the brain. As I have no notes of this first case, in which I observed pain in the knee as a symptom of meningitis, I can state only that signs of cerebritis, which soon ended fatally, set in first several days after the occurrence of the pain.”

Three other cases, in which Dr. Lund observed this symptom, are recorded.

“Were I,” observes Dr. Lund, “from the few observations I have made to draw any conclusions as to the symptom in question, they would be the following:—

“Pain in the knee occurs not very unfrequently as a symptom in meningitis in children. It is met with in about ten per cent. of such cases.

“This pain in the knee is persistent, is sometimes very violent, increases on every movement of the joint, and is not relieved by local means. It is connected neither with swelling nor with any other change in the form or appearance of the joint.

“It may attack one or both knees.

“It may occur some time before the distinct development of the other symptoms of cerebral inflammation, and may then either (as in the fourth case) cease before the appearance of the latter, or it may continue (as in the third case) until the disturbance of intelligence makes it uncertain whether it any longer exists; or it may (as in the second case) manifest itself after the cerebral symptoms have already been developed.

“It may present itself both in acute and in chronic cases. It seems to be most violent in the more acute cases, and in those combined with severe spasms (as in the second case).

“In the cases observed by me it occurred between the sixth and fourteenth year, and in both sexes.

“I am not aware that I have observed a pain in the knee in children presenting the characters I have described, except in connection with meningitis. Therefore, I assume that when it occurs, it must be regarded as a not unimportant diagnostic sign. Either it will, by its appearance before the development of the cerebral symptoms, give a hint that meningitis is to be expected, or by manifesting itself in the course of that disease, it may afford a distinctive mark, facilitating the diagnosis between meningitis and other affections liable to be confounded with it, as, for example, typhus.

“I will not attempt any further explanation of the occurrence of this symptom, especially as I have had the opportunity of examining *post-mortem* only one of the four cases which were under my care, and in that one I had permission only to open the head. That all four patients laboured under cerebritis, must be looked upon as certain. But whether the pain in the knee in these cases was connected with and was caused by the changes existing in the brain, or whether it should be ascribed to a coexistent inflammation in the spinal marrow or its membranes, is perhaps more difficult to decide. But in favour of the first view I may remark, that the pains in the lower extremities which accompany inflammation of the spinal cord, usually have a greater extent, and are not confined to particular joints, are most frequently combined with spasmodic

twitchings in the extremities, and soon pass into paraplegia, not to mention that the dorsal pain in this affection is generally tolerably well marked."—*Dublin Med. Press*, June 29, 1864.

10. *On Subclavian Murmur.*—The evidence furnished in a paper by Dr. THOS. PALMER (*Lancet*, April 2, 1864) goes to show very conclusively that subclavian murmur is quite consistent with a perfectly healthy condition of the artery or lung.

"It happens," Dr. P. says, "that I am medical officer to certain benefit societies, composed exclusively of working men. In examining those presenting themselves for admission, I have for years been struck by the large number of them, seemingly in rude health, who were subjects of subclavian murmur. I was at first uneasy lest this should betoken latent mischief, but soon found that my cases of phthisis, heart and lung disease, were not in excessive proportion. This year I have kept an exact account of the number examined, the age and trade of each, with the proportion of them who were subjects of this sound. These I have put into the form of a table as below. No one was less than seventeen or more than forty-four years of age.

Trade.	No.	Right.	Left.	Both.
Porters	4	1	..	1
Painters	19	1	1	2
Photographer	1	..	..	..
Clerks	5	..	..	..
Domestic servants	2	..	..	1
Farriers	4	..	..	2
Coach, cab, and carmen	16	2	3	2
Carpenters	9	1	1	1
Gravedigger	1	..	1	..
Toll collector	1	..	1	..
Butchers	3	..	1	..
Masons, bricklayers, and plasterers	10	..	1	1
Gold refiner	1	..	..	..
Shopmen	6	..	..	..
Shoemakers	5	..	..	1
Smiths	7	..	3	..
Labourers	10	1	..	..
Tailors	3	..	1	..
Horsekeepers	4	1	..	..
Gardener	1	..	..	..
Sawyers	2	..	..	..
Police	2	..	..	..
Plumbers, &c.	6	..	3	1
French polishers	2	..	..	1
Hydraulic engine man	1	..	..	..
Unknown	4	..	1	..
Total	129	7	17	13

"From this table it will be seen that of 129 men of the callings specified, 37, or more than one-fourth, were subjects of this murmur; nevertheless they were all in the enjoyment of perfect health, except for a hernia or some deformity of the extremities, perhaps. I shall make no attempt here to speculate as to the effect of different callings in causing subclavian murmur, interesting as the question is, being fully aware that a vastly larger number of cases must be accumulated before such an attempt can be safely made.

"The entire value, in a practical point of view, of subclavian murmur as an index of disease, depends upon its causation. If, then, I can show that it may arise from natural causes, and is compatible with the enjoyment of perfect health in a large number of persons, I shall have contributed towards a just estimate of its value as a sign of disease.

"That the murmur is of arterial origin no one will doubt who has read Dr. No. XCVI.—Oct. 1864. 33

B. W. Richardson's admirable essay on it in his *Asclepiad*. I shall therefore take this as proved. The causes of the sound in health I believe to be several; of two at least I have no doubt—viz., 1st, pressure exerted on the artery by a subclavian muscle enlarged by any cause; and, 2d, by diminution of its calibre from below by elevation of the first rib. The former of these causes is espoused by Dr. Richardson in his essay, where, if I understand him aright, he mentions no other origin for the murmur in health; the second is here advocated, as far as I know, for the first time. While admitting freely my belief that many instances of the sound have their origin in pressure by the subclavian muscle, I am of opinion that another series of them is caused by elevation of the first rib; and this view is supported by the following considerations: 1. That in many cases the murmur is heard only during inspiration and holding of full breath, and that in others it is greatly increased at those times, though continually present in a less degree. 2. That this vessel rests on the surface of the first rib, which is usually grooved for it, indicating very close proximity; an elevation of this bone, then, by the scalenus anticus or otherwise (as by holding out the arm), will trench upon the calibre of the artery, and give rise to the murmur in conformity with the well-known law; when the rib falls again, the sound falls with it. The minute and constantly occurring irregularities in the distribution of arteries and other parts will naturally and easily account for the occurrence of the murmur in some individuals only. 3. That the murmur is much more frequently found on the left side than on the right, as all observers unite in saying. This circumstance appears to me to be owing to the different courses which the two arteries pursue with reference to the first rib: the left, arising deep in the thorax, passes up behind and hooks over the corresponding rib, and is thus much more likely to feel the effect on its calibre of an upward movement of that bone than the right subclavian, which follows a nearly horizontal course from the innominata.

"That some other cause besides increased volume of the subclavian muscle operates in producing the murmur is evident from the fact of its more frequent occurrence in the *left* artery, whereas the *right* muscle is the strongest worker. Thus, in the above list, the three smiths presenting the sound all have it on the left side; the two sawyers examined had it not at all, yet this very trade—that of sawing—is specified by the advocates of the subclavian muscle as predisposing; and of nine carpenters, only three presented it. Again, there is no doubt that, in most cases, the action of raising the arm to a right angle with the trunk markedly increases the sound, and this is claimed by the advocates of the muscles as establishing their view; but I submit that it is equally calculated to prove that the elevation of the first rib is the cause, for the clavicle and it are so firmly united by the costo-clavicular and coraco-clavicular ligaments that the former cannot be raised without the latter partaking in the upward movement. The subclavian muscle itself also contributes to move the rib upwards; for, in the case contemplated, it takes action from the more fixed point (the clavicle) to the less fixed one (the rib).

"In those cases where the murmur is heard to be increased during inspiration, or is only then present, a little caution is required in order to discriminate duly between the augmented murmur and the mixture of the natural vesicular with the arterial sound. The risk, too, of recording as subclavian murmur sounds produced by one's own stethoscope must be remembered, but can easily be avoided by searching for the murmur chiefly beneath the centre of the clavicle; it is only in the outer part of its course, where the artery emerges from beneath the bone, that I have been able to produce the sound at will. Were any confirmation wanted of the fact that the murmur is arterial, it would be found in the circumstance that it may often be heard rapidly increasing in intensity while nervousness under a somewhat protracted examination makes the heart beat fast and strongly.

"I cannot but think that a careful consideration of the figures and facts given above will satisfy most that in a working man free from discoverable disorder this murmur is wholly untrustworthy as an evidence of disease. I studiously confine my assertion to the ease of working men, because among them my observations have been made. As to the richer classes the medical officers of

life insurance companies could make highly interesting observations. Of the value of subclavian murmur as a diagnostic help, when associated with other evidences of disease, no one is more conscious than I am; but this forms no part of the object I have proposed to myself in this paper."

11. *Tracheal Dysphagia*.—Dr. HYDE SALTER relates (*Lancet*, July 2 and 23, 1864) five cases of tracheal dysphagia, and sums up his conclusions respecting it in the following propositions:—

"That dysphagia is a symptom of catarrh.

"That the circumstances attending this form of dysphagia show that it depends on an inflamed and (at any rate sometimes) ulcerated state of the windpipe.

"That dysphagia, therefore, does not necessarily imply an implication of the organs primarily concerned in swallowing; that, in fact, it may be an affection of the organs of respiration, and not of deglutition.

"That this form of dysphagia is a transient affection, and terminates favourably.

"That its diagnostic signs are remarkably clear and precise.

"That the recognition of this cause of dysphagia must greatly modify the grave and unfavourable prognosis that the symptoms would otherwise suggest."

Dr. Salter states that his treatment of this affection is respiratory treatment. "In managing these cases," he says, "I thought nothing of the dysphagia; I thought of the tracheitis, and treated them as uncomplicated cases of respiratory disease, and in each case I was rewarded by complete and rapid success. My principal treatment was sedative and counter-irritant, with functional rest, external warmth, and such a suspension of sources of irritation as is implied in breathing a warm air, keeping the mouth shut, &c."

12. *The Condition of the Stomach and Intestines in Scarlatina*.—Dr. SAMUEL FENWICK read before the Royal Medical and Chirurgical Society (June 28, 1864) a paper, the object of which was to prove the following propositions: 1st. That the mucous membrane of the oesophagus, stomach, and intestines is inflamed in scarlatina. 2d. That desquamation of the epithelium of these parts takes place. 3d. That notwithstanding the anatomical changes in the mucous membrane of the stomach, the formation of pepsine is not prevented. 4th. That the condition of the skin is similar to the condition of the mucous membrane in scarlatina. In support of the first proposition, the microscopic examinations of the mucous membranes of the oesophagus, stomach, and intestines were detailed in ten cases of death from scarlatina during the first week of illness, and in six cases who died in the second and third week of the fever. The first effects of the scarlatina poison upon the mucous membrane of the stomach were shown to be the congestion of the bloodvessels and the stripping the epithelium from the tubes and the surface of the organ, and also the softening of the tissues. The tubes are greatly distended by granular and fatty matters, or by small cells intermixed with granules, and in some cases they are lined by a newly-formed membrane. Sometimes no normal cells can be distinguished; in other cases they are present, but are scattered irregularly. After the second or third week the tubes are found less distended than at an earlier period, and whilst their closed ends are still loaded with granular matters, which greatly obscure the gastric cells. These become more evident towards the surface of the mucous membrane. The cells at this period are sometimes very large, sometimes loaded with fat or coated with granules, and seem to have but little adhesion to their basement membrane, as they readily separate from the tubes, but adhere closely to each other. The effects of the inflammation upon the intestines seem, in slighter cases, to consist in the effusion of granular and fatty matters into the mucous membrane; but in more severe cases the tubes of Lieberkühn are obstructed by epithelial cells, whilst extravasations of blood take place in the villi, and these, with the rest of the mucous membrane, are loaded with small cells and granules. In one case the mucous membrane was entirely stripped of villi, excepting a few fragments which still remained, and the enlarged and prominent openings of the follicles of Lieberkühn gave its surface the appear-

ance of a sieve. In some instances in which the pancreas has been examined, evidences of disease presented themselves. The second proposition was stated to be more difficult of proof, inasmuch as vomiting usually occurs only in the first stage, and the author had no opportunity of examining the vomited matters at this period of the disease. In one case, in which vomiting took place in the third week, fibrinous casts of the stomach tubes were discovered, and inflammation of the mucous membrane was proved to have existed by post-mortem examination. The chief reason upon which the opinion that desquamation of the epithelium occurs was founded, was from the microscopic examination of the contents of the stomachs of those who had died of this disease. The contents in recent cases consisted of pieces of fine membrane, of cells, and of granules and shreds of membrane. The membranes were of the shape and size of the tubes of the stomach, and were covered with granules and fat. The cells varied from 1-1200th to 1-2200th of an inch, and were usually fringed with fine pieces of membrane. In cases of longer duration the membranes were covered with cells, and were also of the size and shape of the stomach tubes. In order to ascertain if these appearances were trustworthy as evidences of inflammation, the contents of the stomachs of forty-five subjects were examined at the Middlesex Hospital, the condition of the mucous membrane being at the same time noted. In only one were there any fibrinous casts, and it was in a case of acute gastritis. In eighteen there were only separate cells, chiefly of the columnar form, and in none of these was there any inflammatory action. In eight cases casts of the upper parts of the tubes were plentiful, composed only of healthy conical cells, and in all the mucous membrane was in a natural condition. In eighteen there were either plugs formed of cells and granules from the secreting parts of the tubes, or the casts of conical cells were overlaid with granular matters, and in all of these the stomach was more or less inflamed. Two cases of gastritis, unconnected with scarlatina, were also quoted as examples of the forms in which casts of the stomach tubes appeared in vomited matters during life, and the author stated he had detected casts of the stomach tubes in matters vomited by persons affected with gastritis connected with diseased kidneys, with inflammatory dyspepsia, and other forms of inflammation of the gastric mucous membrane. It was urged that if casts of the gastric tubes can be discovered during life in cases of gastritis, and if in scarlatina this condition exists, and casts have been found in the stomach after death, there is every probability that desquamation of the epithelium takes place in this organ as it does in the skin and the kidneys. In support of the third proposition, the results of the following experiments were given in three cases of scarlatina : Ten grains of hard boiled white of egg were digested at a temperature of 90° for twelve hours in an infusion of the mucous membrane, to which 3 per cent. of hydrochloric acid had been previously added. The average loss of albumen was three grains and two-thirds. Similar experiments performed with the stomachs of eleven males, who died of various diseases at the same hospital, gave an average loss of four grains; so that there had been scarcely any diminution of pepsine produced by the fever. As a contrast to this were the results of similar experiments upon four cases who died of typhus fever. In two of these the albumen had gained three grains of weight by imbibition, and was not at all softened; whilst in the other two it was softened, and one had lost only half a grain, the other one grain and a half in weight. But as the activity of the digestion must depend not only upon the relative amount of pepsine, but also upon the bulk of the mucous membrane, this was also attempted to be estimated. The average weight of the mucous membrane of the stomachs of ten males dying of various diseases at the Middlesex Hospital was eighteen drachms, the weight of two recent cases of scarlatina was eighteen and sixteen drachms (the latter being in a boy), whilst it only amounted to fifteen drachms in one who died in the third week of illness. In four cases of typhoid fever the average weight of the mucous membrane only reached eleven drachms. Under the fourth proposition it was stated that the skin had only been examined microscopically in three cases. In the first, in which the patient died after a few days' illness, the only morbid appearance in the entis was an occasional minute extravasation of blood in the neighbourhood of the sudoriferous ducts. The rete mucosum was greatly thickened, and nume-

rous round cells with large nuclei were everywhere visible, intermixed with the natural cells. The basement membranes of the sweat-glands were thickened, and the epithelium lining them was so much increased that in most cases it obstructed their channels. In some of the sweat-glands the coils of which they were composed were loaded with coagulated blood, and were greatly and irregularly distended. In the other recent case the appearances were similar, excepting that the external layers of the cuticle were stained with blood in minute patches, and the sweat-ducts were also reddened; but there were no extravasations of blood either in the glands or cutis. In some of the ducts the epithelium was detached from the basement membranes. In the case of a man who died during the third week the sudoriferous tubes were still choked up, but in the glands the epithelium seemed in many places to be torn away, leaving the basement membranes bare, or only covered by ragged particles. The cutis was in a natural condition. The author stated that although he had, in accordance with the usual custom, described the appearances of the skin and mucous membranes as the results of inflammation, yet that certain considerations suggested the idea that the term when so used was perhaps misapplied. In scarlatina, we find that in each part the morbid condition is mostly confined, in the first instance, to the basement membranes, and consists in the formation of layers of new cells, which, in the skin, are transformed into cuticle of natural appearance, and in the stomach contain pepsine. If future researches should prove that a similar condition occurs in the kidneys and other parts, it will be necessary to look upon the structural changes produced as resulting from increased physiological, rather than from pathological action; and that the primary effect of the scarlatina poison is suddenly and violently to stimulate the natural cell-growth of the various secreting organs.

Dr. WILSON Fox said that he had listened with much pleasure to Dr. Fenwick's very able paper. It had possessed an especial interest for him, inasmuch as Dr. Fenwick's observations on scarlatina confirmed those which he had himself communicated to the Society in 1858, on the condition of the stomach in a variety of acute diseases, including variola, typhoid and puerperal fevers, pneumonia, peri and endocarditis, cholera, and many others, in which he had found the stomach in a condition very closely resembling that described by Dr. Fenwick, and which, after Professor Virchow, he had designated as one of acute catarrh, the mucous membrane being hyperæmic, swollen, and cloudy-looking, and covered with very tenacious mucus. This condition Dr. Fox had always found associated with a granular condition of the epithelial cells, which were shed with great facility both from the surface of the membrane and from the interior of the tubes, and were found in great numbers, and often enlarged and presenting multiple nuclei in the tough mucus covering the surface. Dr. Fox said that since he had made these observations he had been in the habit of regarding the furred condition of the tongue in acute diseases as an index of the same irritative production of epithelium through the gastric intestinal tract. He had also at the same time been able to point out, on anatomical grounds, that chronic affections of the stomach were frequently associated with chronic affections of other organs. On some points of detail Dr. Fox said that his observations differed from those of Dr. Fenwick. He had not examined with the microscope stomachs of patients dying from scarlatina, but the appearances which these presented to the naked eye corresponded so closely with those to which he had alluded, that he spoke on them with more confidence than he should otherwise feel inclined to do. He still thought, as he had pointed out in his original paper, that the granular matter which Dr. Fenwick described as occurring free in the tubes was really contained in the interior of epithelial cells, and that it was only in the severest cases of acute gastritis, in which the cells became at once broken down, that the granular matter was found free. With regard to the casts of tubes described by Dr. Fenwick, Mr. Fox, not having examined the stomachs of scarlatina patients, could not make any positive observations, but he had never found any in the cases of other diseases which he had mentioned. He had, however, often observed appearances in the mucus having a most deceptive resemblance to casts, from the manner in which the epithelial cells were agglutinated by the tough mucus. He did not think that

these casts, if they did occur in the stomach, could be of a fibrinous nature any more than the first epithelial desquamations from the kidney in the early stages of Bright's disease possessed that character: nor was he of opinion that the membrana limitans of the gland separated with the epithelium. He believed that when the membrana limitans (when it existed) was destroyed or injured, the power of reproducing epithelium was impaired or lost. Epithelium often separated in continuous masses from mucus surfaces and from the interior of glands.¹ Such desquamation was not only exceedingly common under conditions of irritation, but was also under some circumstances a physiological act. It had been noted long ago by Mr. Goodsir during digestion, and many recent observations on this subject were contained in Virchow's Archiv. Dr. Fox was of opinion that Dr. Fenwick's observation, though very valuable as evidencing the participation of the stomach and intestines in the consequences of the scarlatina poison, did not show anything specific in that organ or peculiar to the disease in question.—*Med. Times and Gaz.*, July 23, 1864.

13. *Indigestion in Early Phthisis.*—Dr. E. SYMES THOMPSON, in an interesting paper, read before the Medical Society of London (March 28, 1864), observed that indigestion in phthisis was regarded by some as a part of the malady dependent on impure blood; by others, as but a casual complication, tending, by its depressing influence, to the production of tubercle. In fifty cases of undoubted consumption, tabulated with a view to this inquiry, dyspeptic symptoms were found to exist at the commencement in about one-half. In one-fourth the disease seemed to follow inflammation of the lungs or of the pleura. Cough was the first symptom noticed in one-fourth; and shortness of breath in about one-eighth of the cases. Haemoptysis, though frequently an early symptom, was rarely the first.

Without referring to the later derangements of the later stages of phthisis, except to state that those who early suffer most from dyspepsia are subsequently prone to diarrhoea, the author passed to the consideration of the first variety of indigestion—especially common in hereditary cases—in which the general feebleness of the digestive functions is traceable to a want of constitutional vigour. The food is slowly digested, produces a sense of fulness and pain in the epigastrium, and between the shoulder-blades. The gastric juice may be copious; but it is too weak to perform its function; hence arise water-brash and sour eructations, or the secretion is diminished; the mucous coat becomes dry and abraded; and the red, glazy tongue, flushed face, and epigastric oppression, afford evidence of the diseased condition. In these cases the feeble organ must not be overcharged; by diluting the food we may hasten its passage through the pylorus. Milk is the simplest diet; and, when mixed with lime-water, passes uncoagulated through the stomach. But when the digestive power of the small intestine is deficient, animal food, which is the longer retained and more completely digested in the stomach, should be preferred to vegetables, and fat must be interdicted. Where solid food can be borne, a little nicely cooked meat, with aerated bread toasted, may be taken in the morning, when the stomach is most vigorous. Stimulants should only be given when they help digestion. Nauseating physic, violent exercise, cold, and anxiety must be avoided; but gentle out-door exercise, cold or tepid sponging, with friction of the skin, encouraged. The good effect of active occupation of the mind and body, though acknowledged in ordinary dyspepsia, is often disregarded in consumption. Food is best taken in small quantities at frequent intervals: for it has been shown by Dr. Edward Smith, in his recent Lettsomian lectures, that the pulse rises often ten or twenty beats after a full meal; but when nourishment is taken in small quantities throughout the day, it is far more equable. Allusion was then made to a paper read before the Royal Medical and Chirurgical Society in 1861, in which Dr. SYMES THOMPSON had shown the great importance of keeping the

¹ Dr. Fox begs us to append to his remarks a fact which he omitted to mention to the Society, that he has notes of a case of acute inflammatory diarrhoea, which came under his observation some years ago, and of which he has preserved drawings of casts of the crypts of Lieberkühn, found in the intestinal mucus.

pulse at a low and even standard, and the influence of ozone, compared with digitalis and other sedatives. If acidity of stomach exists, it is due, not to an excess of gastric juice, but to a deficiency in its solvent principles, the mineral acids given at meal times relieve it, alkalies being prescribed in the intervals. Pepsine or rennet wine, when given with the acid, the quantity of food being at the same time limited, are similarly helpful, by setting on foot the changes in the conversion of food which the gastric juice is then able to complete.

The second form of phthisical dyspepsia, usually characterized at the outset by frontal headache, is not directly referable to an error in diet; but is dependent on unhealthy blood. The poison, like that of gout, seems gradually to accumulate, and gives rise to periodic attacks of sickness, followed by relief. The nausea and violent retching depend, as in sea-sickness, on a cerebral cause; and afford no evidence of stomach disease, but merely of reflex irritation. As the blood fails to supply the proper materials for healthy digestion, the appetite is lost, food is not absorbed, the tongue becomes furred, and all the secretions and excretions diminished; there is a feeling of melancholia and general *malaïse*, which is often termed "biliousness" and constipation. The skin is dry, harsh, and inactive; and the urine is of low specific gravity. If this condition be allowed to continue, the morbid elements will soon be eliminated from the blood, and tubercle will be deposited in the lungs. The relief now afforded to the feelings of the patient on the establishment of sweating and expectoration is very great: the unnatural activity of the destructive processes gives rise to a sense of active vitality; and, in the place of general despondency dependent on retention of bile, urea, etc., from torpor of all the secretions, undue hopefulness and vivacity occur. Little can be accomplished in these cases by regulation of the diet alone; the main indication is to prevent, by eliminative treatment, the establishment of active lung-disease. We may begin with an emetic, with a mercurial and a morning aperient; aloes, in the form of a pill or compound decoction, is the best purgative. The good effect of the mercury, which it is rarely necessary to repeat, may be maintained by the persevering use of taraxacum with sarsaparilla. Sal ammoniac, with or without the tincture of the sesquichloride of iron (as suggested by the author's late father), seems well calculated to obviate hepatic congestion, and correct the condition of blood which characterizes such cases. Where the catamenia are absent or scanty, Griffith's iron mixture may be given with the decoction of aloes. It is often most satisfactory to see the dyspeptic symptoms yield under such treatment, and the indications of pulmonary phthisis pass away with them. The diet must at the same time be simple; milk and soda-water taking the place of beer, spirits, and coffee, for alcohol checks metamorphosis; but when we wish to encourage change, water is much better. Hence, the hydropathic system, or the hot-air bath, which calls forth to the full the eliminating power of the skin, may be serviceable. Yeast has been given with a view to check the malassimilation by which tubercular conditions affect the blood, and seems favourably to influence digestion, when the saccharine and farinaceous elements of the food are imperfectly disposed of. Its curative power in typhoid fever, erysipelas, and carbuncle, has long been recognized, and its power of diminishing purulent secretion is considerable. Dr. Thompson had lately found remarkable benefit from its use in two or three cases of excessive expectoration, when administered in tablespoonful doses three or four times a day. The power of yeast out of the body is limited to the conversion of grape sugar into alcohol and carbonic acid. Wine and spirits check secretion. Can the alcohol producing power of yeast account for its influence on the blood?

There is a third class of cases, the converse of that last described, in which there is no evidence of disordered digestion until tubercle is deposited in the lung and cough established. If now a fit of coughing occur soon after a meal, the contents of the stomach are rejected. This reflex vomiting being dependent on an abiding cause, is persistent, unlike that arising from the passage of a gall-stone or renal calculus, and is induced by the presence of unsuitable food, by a mental shock, or even a change of posture. Sometimes there is only dry retching, but more often the movement of the stomach leads to secretion from its coats, and a sour fluid is ejected. The gastric juice may be poured out in

consequence of reflex irritation without the occurrence of vomiting: and thus the digestive power is weakened, and the food is received by an exhausted organ, where it remains undigested, and, by its irritation, may lead to superficial ulceration. Thus, the lung-disease becomes of secondary importance to the stomach derangement which it has caused. To quiet the cough, allay the retching, and tranquillize the nervous system, hydrocyanic acid should be given, with or without morphia; and where the gastric juice is constantly poured out and unduly acid, carbonate of potash or soda, or liquor potassæ may be added. At the Hospital for Consumption at Brompton, the *mistura gentianæ alkalina*, which consists of carbonate of soda, with prussic acid, in infusion of gentian, is largely and successfully given in such cases. Bismuth, prepared chalk, and lime-water are valuable remedies, but where the cough is very severe and paroxysmal, the inhalation of a few drops of chloroform is most successful. The bromide of ammonium has been used with advantage in some cases. The diet should be light, and given at short intervals. Farinaceous foods, which are changed to sugar and then to acetic acid, and oily matters, whence the acrid fatty acids are developed, must be avoided when acidity of stomach is present. In atonic cases, meat is often digested better than slops or pappy food. In broth, when the fluid portion is absorbed, the nutritious part is often too soft and concentrated to excite the healthy action of the stomach. Tea and other hot fluids are apt to produce a sodden state of stomach, and give rise to flatulence, waterbrash, etc. It is rare to find sarcinae in consumptive cases.

Where phthisis originates in disorder of the lacteal and lymphatic systems, direct evidence of indigestion may be wanting; but the body wastes, and it is evident that there is some fault in the blood-forming apparatus. A microscopic examination of the blood may aid in determining where the diseased action originates; a paucity of red and excess of white corpuscles indicates that the chyle transforming force is deranged, that there is either a deficient supply of "raw material," or the machinery needs cleansing or partial renewal.

In the treatment of these cases our main reliance must be placed on cod-liver oil, which, if it cannot be taken alone, in combination with an acid, bitter mixture, or in the form of emulsion with liquor potasse, must be endermically introduced, by combining with the albuminous elements of the chyme, it feeds the blood with healthy chyle-granules, stimulates the capillary system, and invigorates all the functions of the body. Animal oils must be regarded as food, and if omitted in any case, cream, *pâtes de foie gras*, or other digestible oleaginous material, should be substituted. Mild chalybeates, as steel wine, or the reduced iron of the *British Pharmacopœia*, may help in building up the red corpuscles.

The author alluded to a number of cases, one of which was detailed, in which a peculiar form of dyspepsia seems consequent on the frequent administration of small doses of mercury. A case in which symptoms of intestinal obstruction and another in which gastric derangements alternated with lung-disease, followed, and the paper concluded with the observation, that while there is hardly a disorder that calls for more tact and judgment in the practitioner, there is none in which a familiarity with physiological chemistry is more important.

Dr. THOMPSON, in reply to the various questions, observed that the dislike exhibited by consumptive patients for fat, contrasted curiously with the fondness of emphysematous persons for it. The blood, in the one case, was over oxidized, and in the other inadequately supplied with oxygen. Not only was a partiality for soles often exhibited, but oysters were specially appreciated by the phthisical. He mentioned that his father (Dr. Theophilus Thompson) had frequently used oleine extracted from various oils, but had not been so well satisfied with its effects, even when employed as an injection, as with the oil itself. He had often used endermically, the neat's-foot oil with iodine, with good effect. Dr. S. Thompson had not found De Jongh's oil agree so well as that prepared from fresh livers; nor was he aware of any experiments or observations exhibiting the superiority of the putrid over the freshly prepared oil. De Jongh's was not the only oil made without pressure, which (he agreed with Dr. Leared) was injurious to the purity and utility of the preparation. He was astonished to hear, in the present day, that this oil did nothing more than put fat on the outside of patients. It had been shown to increase the number of

red corpuscles, and he appealed to the experience of every Fellow, whether it did not in many ways alleviate where it did not cure disease. He had not tried the bicarbonate of lime, but, from analogy with similar salts, would expect benefit from its use. Hydrochloric acid was often useful, and might be given at mealtimes when alkalies were indicated, the latter being prescribed in the intervals between meals.—*British Med. Journ.*, May 21, 1864.

14. *On the Influence of Pleurisy in the Development of Phthisis.* By Dr. BEAU.—In the hospital of La Charité is a patient whose case, though apparently of little importance, has given to Dr. Beau the opportunity of pointing out the influence which pleurisy seems to exert on the development of phthisis. Between these diseases there is a very close connection; often pleurisy merely supervenes upon phthisis: but it is not uncommon to see a pleurisy occur in a subject who, till then, has presented no rational sign of phthisis, and to see it followed by the development of that disease. This was the opinion of Broussais, who attributed to inflammation the formation of tubercles, and Dr. Beau has met with many facts which have led him to the same conclusion. Thus, in the case of the patient in question nothing indicated a year ago that he was tubercular. This winter he took a pleurisy, perhaps two; when admitted into La Charité there was still a little effusion into the left side, which remained persistent, and was accompanied with a little febrile excitement towards evening. A blister removed the effusion, but did not lead to the disappearance of the fever; the patient was then carefully ausculated, and the presence of tubercle was recognized in the left inferior scapular region. Cases of the kind are not uncommon. Dr. Beau had for his house physician a young man who contracted pleurisy; two years later he died tubercular. At this very time he has under treatment a patient whom two years ago he treated for pleurisy, and who is now tubercular. Many other examples could be quoted of tubercle supervening upon pleurisy. Is this any reason for treating these patients according to the system of Broussais? By no means; a very spare diet is bad because it debilitates, and an enfeebled state of the organism opens the door to all the diseases which afflict humanity.—*Edinb. Med. Journ.*, Aug. 1864, from *Journ. de Méd. et de Chirurg. pratiques*.

15. *Smoking as a Cause of Fatty Heart.*—Dr. HENRY KENNEDY, in a paper read before the Surgical Society of Ireland, on fatty heart, makes the following observations on the influence of tobacco-smoking in its production:—

"I must notice one [cause of this disease] which has year after year been gradually forcing itself on my attention, till it has now reached the strongest conviction in my mind—I mean the habit of smoking, which, I believe, I have traced in many instances to have been the predisposing cause of the disease. No one is more aware than myself of the difficulties which beset a question of this sort, nor the great opposition which, for obvious reasons, it is likely to meet. Still, the opinion has not been taken up hastily, nor, as I think, without such proof as the subject admits of. All will recollect that within a very few years a great paper war was carried on in the pages of the *Lancet* on the effects of tobacco, and the opinions expressed were sufficiently contradictory. Amongst them all, however, I did not observe one point noticed which seems to my mind of great importance in this question. It is the fact that if any one, no matter what his temperament may be, gets out of health, so that the powers of his system are lowered, he must then either lessen his smoking or give it up entirely. I have met no exception to this statement, which every one may test for themselves—as, for instance, in cases of paralysis, no matter how slight they may be. From the fact, however, I conclude that tobacco, besides other effects, is a depressor of the nervous system, and that there is a constant antagonism going on between it and the healthy state of the constitution, and when used too freely it ultimately engenders a state of health which is very apt to be followed by a fatty heart. At any rate, whatever the explanation be, the fact is as stated above, and I have seen now too many cases of fatty heart, in what are called heavy smokers, to have any doubt on the matter."

"This day, 4th March, a case which strongly confirms some of the remarks

just made came under my notice, and for the third time. The patient, aged 34, is a man of full height, made in the very finest proportions, and remarkable, or at least was, for great physical strength and activity. He has always been strictly temperate as regards strong drink, but is the heaviest smoker I recollect to have met. About three months since he began, and without any cause he could discover, to lose flesh and strength very rapidly, and his wind, as he called it, became so short that he was compelled to give up active exercise. He now looked pale and depressed, having had a cold, which he found it hard to shake off. He told me he had, at my wish, twice tried active exercise since I last saw him. On the first trial he got through it but badly; on the second he was forced to give it up, as his breathing became so hurried and his heart beat so violently. It seems scarcely necessary to add that he had been driven to give up his darling tobacco.

"Except the pulse, there is nothing in this case to indicate disease. The two sounds of the heart are distinct and unattended by murmur. There is no increase of dull sound on percussion, nor can I say that the impulse varies from health. Whilst he sits, however, the pulse beats but 48 in the minute, and it was just the same from the first time I saw him. It is large and full to the finger, under which it passes slowly, and is readily compressed. Any movement at once increases the beats, and more than occurs in the healthy state.

"Now, in this case I have scarcely a doubt that the heart has become fatty, and most probably in the worst form: I mean where the muscle itself has degenerated. Yet, he tells me, he passed a physician and had his life insured just five months since!"—*Dublin Medical Press*, April 20, 1864.

16. Treatment of Apnoea from Chloroform. Drowning, &c.—Dr. CHARLES KIDD, in a communication made to the British Association, extols the efficacy of the Faradization form of electricity, not applied to the heart, but solely to or through the respiratory muscles, diaphragm, phrenic nerve, &c., so as to assist or originate, apparently, the only true form of artificial respiration so desirable. "This form of electricity," he says, "cures hemiplegia, by renewing the vital activity of muscles paralyzed for a time by a clot in the brain; but the ordinary electricity is directed back along the nerve to the brain, already disordered, and does mischief, and near the eye, for instance, may cause total blindness. So that, where we have already the brain under chloroform, the 'Faradization' plan acts better by stimulating merely the diaphragm and other respiratory muscles; the mode of application found best in animals being an intermittent but gentle current passed through the phrenic nerve (where the omohyoid muscle *in the neck* lies at the outer edge of the sterno-mastoid), by means of the wetted sponge (not the dry sponge), the other pole or sponge also, as in this lady's case, wetted, applied somewhere about the floating ribs nearest to the diaphragm, or, still better, one or two acupuncture needles struck at once into the latter muscle, so as to excite alternate action of the current from the neck to the respiratory muscle, and imitate normal respiration. In animals this plan succeeds in a manner almost marvellous in restoring life where suspended animation exists.

"The patient, in the present case, was a poor married lady, otherwise in fair health, admitted to one of our private hospitals or 'homes,' who was operated on by one of the plastic operations on the female organs, so successful of late, thanks, too, in a great measure, to the calming influence of chloroform. Near the end of the operation, the author (Dr. Kidd), who watched the respiration and pulse all through its performance, was alarmed by both stopping, then going on again, but finally stopping with all the usual signs of death by chloroform: the woman, in fact, lay in a state that it might be said death had obviously set in; she was cold, pulseless, without motion or breathing, her face like stone. The utmost alarm was instantly felt. The so-called 'ready method' of Marshall Hall, as also the Sylvester method of artificial respiration, were persistently had recourse to; still, there was no pulse, no breathing, no animation. The lifeless or all but lifeless body, in a word, lay, as many of the animals poisoned by chloroform are seen to lie, till roused up by electricity. The author of the paper sent at once for the magneto-electric battery. Some confusion arose at first in its application, as the handles or poles were not insulated, and the author him-

self was receiving the shocks, till a German physician standing by happily caught the metallic handles with his coat-tails (non-conductors). This little incident is mentioned to show how totally unprepared for such accidents our London hospitals are. All the persons standing by, too, were solicitous that the electricity should be applied at once to the *heart* (error No. 2); but the directions of the author were, not to the heart at all, but to the phrenic nerve and diaphragm, as already described. The poor patient had now been lying some quarter of an hour pulseless, cold, and without breath, indeed pronounced 'dead.' Off and on alternately the moist poles were now applied about twelve times each minute, so as to imitate in somewise the stimulus of ordinary contractions of the diaphragm; and soon, to the delight of the operator and all around, a deep sighing inspiration was noticed at each break of the circle (this was a great relief), increasing in fulness till it was evident good respiration was established. No pulse, however, was yet perceptible, and cardiae action was still watched for with much eagerness. Minutes on minutes passed away as hours; the patient moaned at the excitement of the phrenic and a pin stuck into the diaphragm (the author's scarf-pin, as no other was to be had); but still it was thought desirable to continue the application of the electricity; there was soon a flicker of the pulse, but not till the expiration of two hours was the pulse quite re-established. It is worth being added that the woman quite recovered, and had no recollection whatever of the four hours her life was in the balance and under the surgical operation. The case, as already stated, is chiefly remarkable as fully bearing out the efficacy of this form of electricity, and applied only in this manner, as previously tried in hundreds of experiments on the lower animals. It has now been tried in four cases on the human subject. It places a serious responsibility on our London and other hospitals where the author's views have not yet been examined, and where deaths are occurring very often; nor is it the least valuable portion of the present researches that they seem applicable to all forms of apnea, whether from drowning, or chloroform, or suffocation in coal-mines, or resuscitation of stillborn children."—*Glasgow Med. Journ.*, July, 1864, from *Trans. British Assoc.*, 1863.

17. *Pathology and Treatment of Aphthæ.*—In the *Gazette Hebdomadaire*, Dr. JULES WORMS treats, in a recent paper, of a disease which is lost in the host of buccal affections described by modern authors. His subject is *aphthæ*—a denomination formerly applied to every superficial and acute irritation of the mucous lining of the mouth, and which Gaersant, Billaut, and Gardien have shown to consist in a vesicular and ulcerous eruption of the mucous membrane, which runs its course in the period of one or two weeks.

From minute examination of the deposit on the surface of aphthæ, Dr. Worms concludes that it consists of a fatty matter, which is not to be found in any other disease of the mouth, and exclusively characterizes aphthæ. The epithelium rises and soon breaks, exposing to view a yellowish secretion, previously discernible through the transparent cuticle, and of which the microscope and chemical tests invariably show the sebaceous nature. It may, on the other hand, be remarked that aphthæ are never met with on the anterior portions of the mucous membrane, where anatomists have failed in discovering any muciparous glands, and where *herpes labialis* more commonly occurs; hence Billard's surmise that aphthæ are a disease of the mucous follicles, characterized by a peculiar sebaceous deposit, acquires additional probability.

In Dr. Worms's opinion, aphthæ are, therefore, but the *acne* of mucous membranes.

This practitioner infers from the solubility of the exudation in ether, that this substance may be a useful local remedy for aphthæ. The pain caused by the eruption, and the difficulty of checking its progress, are well-known features of the disease, and the inefficacy of cauterization, chlorate of potash, anodynes, and other methods of treatment usually prescribed, is very generally acknowledged. Dr. Worms has, on the contrary, resorted to ether with much benefit; this remedial agent removes the yellowish secretion, a new epithelium promptly forms, and no trace of the superficial ulcers remains beyond slightly increased vascularity of the mucous membrane. Either may, therefore, be applied locally with advan-

tage, but the fact of the frequent connection of aphthae with gastric disturbance must at the same time be borne in mind.—*Glasgow Med. Journ.*, July, 1864, from *Journ. Pract. Med. and Surg.*

18. *Thoracentesis in Pleuritic Effusion.*—By Dr. BEHIER.—A long discussion on thoracentesis has occupied the Medical Society of the hospitals of Paris; and as the debates were not free from a certain degree of confusion, Dr. Behier has made a critical review of them, the conclusions of which may be thus briefly stated.

Thoracentesis is indicated and ought to be performed: In all cases where the effusion is in large quantity, and does not diminish rapidly under the ordinary means, and still more if it goes on increasing; in all cases where the patient appears too delicate, too weak to bear up against the long process of resorption of an effusion which occupies completely or nearly completely one side of the chest; in all cases where, although the effusion is not very copious, we find the opposite lung impeded in the performance of its function, as by bronchitis, a certain degree of oedema, etc.; in all cases where we believe we have to do with a patient predisposed to pulmonary phthisis, whether we are unable to make out its existence, or whether we have the proof of it in the side occupied by the effusion, or in the other lung. The last case we willingly allow is by no means favourable.

Before practising the operation, we wait, if possible, until the inflammatory phenomena have abated; it is generally between the ninth and the eleventh days that we expect to see this abatement. At the same time, it must be borne in mind, that inflammatory symptoms may be altogether absent, or at least very little marked in a large number of cases of copious effusions, and that it is precisely in these cases that sudden deaths are most frequent, as they are also those which recover best after thoracentesis. To refuse the operation in such circumstances on account of the slight apparent gravity of the disease, and because we observe neither violent dyspnoea nor imminent asphyxia, would be, in our opinion, a grave fault on the part of the physician. These cases frequently occur in persons of little vital energy; their very passiveness is often an obstacle to their cure by ordinary means. Little capable of undergoing the process of absorption, we ought to aid such patients in the process, and thoracentesis affords this indispensable assistance.—*Edinb. Med. Journ.*, Aug. 1864, from *Journ. de Méd. et de Chirurgie pratiques*.

19. *Treatment of Albuminuria in Children.*—Dr. W. H. DICKINSON read before the Royal Medical and Chirurgical Society (May 24) a paper on this subject.

The granular kidney appears to be unknown in childhood. The only form of disease which produces albuminuria at this period of life is that which produces enlargement of the kidney and gives it a smooth mottled exterior. This is, in fact, a renal catarrh. The tubes become obstructed by an excess of their own epithelial growth, and hence arise all the evils of the disease. If only there is a free escape for the contents of the tubes the vascularity of the gland will be relieved by secretion, and the disorder will soon be at an end. The principle of treatment must be to send as much water as possible through the organ. This fluid is devoid of irritating properties, and probably passes through the gland rather by filtration than true secretion. With these views the patients were restricted to a fluid diet. They took from two to four pints of distilled water daily, and small doses of the infusion of digitalis. When the active symptoms had subsided iron was given. Twenty-six cases were adduced in which this treatment had been pursued. Twenty-two recovered completely; three were lost sight of while improving, but while still having a small quantity of albumen in the urine; one case did badly, and eventually died under other treatment. Many of the cases were of great severity. These results appear better than those afforded by other methods. Among the in-patients at the Children's Hospital otherwise treated, 11 died out of 39; and of 69 cases treated by Dr. Miller in Dispensary practice, 8 died. It was found that on an average the little patients were restored to apparent health in 30 days, while 15 days

more were needed to get rid of the last traces of albumen. The use of the water did not seem in any case to increase the dropsy, but the contrary. It was usual, however, when the swelling was great to let the digitalis set up a certain amount of diuresis before ordering the full quantity. The subsequent use of iron was believed to correct the effects of the disease, without influencing the disease itself. On the occurrence of secondary disorders, such as convulsions, or acute inflammatory attacks, it was argued that the treatment of the renal mischief should be sedulously persisted in, with such additions as might be called for. The anaemic state of brain in uræmic convulsions, and their frequent occurrence after the exhaustion of diarrhoea or vomiting, were urged as reasons for abstaining from depressing remedies. A case was cited in which, under these circumstances, small doses of opium had been used successfully. A case was also given in which acute pleurisy had passed off under the use of only local measures. The paper professed to deal only with the albuminuria of childhood.—*Med. Times and Gaz.*, June 4, 1864.

20. *Apiol in Amenorrhœa and Dysmenorrhœa*.—Dr. MARROTTE has published a work on the utility of apiol (the active principle of parsley) in the treatment of these affections. Dr. CORLIET gives (*Gazette des Hôpitaux*) an abstract of this publication, and adds the results of his own experience during eight years, and points out the cases in which it may be expected to be useful.

A. In all cases where the menstrual disorder depends upon the derangement of a vital element, where there is plethora or anaëma, apiol should not be used, for, being a nervous tonic, it will only aggravate the condition of the patient. But if the condition of chlorosis be removed, apiol may be prescribed with a good prospect of success. The following case will illustrate this: A lady, thirty-eight years of age, of a lymphatic and nervous temperament, had suffered for three months from amenorrhœa, complicated with extreme chlorosis. Dr. Galligo at first ordered apiol, but without success. At a later period he combined it with chalybeates, which had previously done no good. The combined use of iron and apiol effected a cure. Dr. Marotte relates the following case: Miss C., eighteen years old, was of a lymphatic temperament. In childhood she had had measles, hooping-cough, and modified smallpox. Her skin was of a dead white, her face somewhat swelled; the gums were swelled and discoloured; she had very little appetite, and often vomited her food. She menstruated first when fourteen years old: for several months the discharge was white, afterwards it became of a reddish colour, but was accompanied by such severe uterine pains that she was obliged to keep her bed. As she was to menstruate on the 18th of October, I ordered her two capsules of apiol on the 15th, two on the 16th, and two on the 17th. On the 18th the menses appeared though still in small quantity, but unaccompanied by colics or uterine pains; they only lasted two days, and the blood was still very pale. On the 21st I ordered a chalybeate, which was continued till the 18th of November, when she resumed the apiol for three days. The menstruation was unaccompanied by pains; it continued three days, and the discharge was more coloured and more abundant.

B. When the menstrual disorder depends upon a diathetic condition (dartres, serofula, etc.), we must by means of a specific treatment, such as bitters, cod-liver oil, preparations of iodine, sulphur, or arsenic, attack the principal malady. Apiol is of no use at first in these cases; but when the cure of morbid diathesis has been effected, it may be employed with advantage in stimulating the torpid menstrual function.

C. But it is chiefly in disorders which are under the influence of the nervous system that apiol is a heroic remedy, leaving far behind it all the emmenagogues hitherto employed. As a neurotonic it supplies to the nervous system the energy it has lost. Change of life, of habits, or of climate often determine amenorrhœa. This is a fact which must not be forgotten, and which is well known to the physicians of boarding-schools and religious houses. This menstrual suppression is transitory; it lasts some months, and sometimes only gives rise to slight nervous disorder, or a slight oddity of character. In these cases, two, four, or at most six capsules of apiol will restore the menstrual flux.

The sudden application of cold during a menstrual period may suppress the

discharge abruptly, and give rise to amenorrhœa, which may last for an indefinite time. In the month of January, 1861, I saw a young lady, seventeen years of age, who had menstruated for two years, but in whom, in consequence of a chill during menstruation, the flow was suppressed. The belly became considerably enlarged; there was, in fact, an ascites, which could only be explained by the amenorrhœa. There was no albumen in the urine. I employed, without success, purgatives, sudorifics, chalybeates, and the ordinary emmenagogues. There was considerable pain at what should have been the menstrual periods. This state continued until the end of April. In May, capsules of apiol given night and morning restored the discharge, though at first it was pale and serous. Iron was continued, and from that time the abdomen diminished in size. The cure was complete.

The point I wish to establish is, that apiol is the best emmenagogue with which we are acquainted in all cases where amenorrhœa or dysmenorrhœa have their origin in a disturbance of the nervous element. The principal condition for success in the use of apiol is in the choice of the proper moment for its administration. In almost all cases of amenorrhœa or dysmenorrhœa which depend upon an organic cause, the use of apiol is contra-indicated. This is not the place to lay down the differential diagnosis of these conditions. If apiol has succeeded in some cases of plethora, it has been because the plethora was not very considerable. "In order," says Dr. Marrotte, "that apiol may succeed, it is an essential condition that the pain which accompanies menstruation depend upon dysmenorrhœa, properly so called, that is, on the vaso-motor innervation of the womb. It has never succeeded in calming nervous pains, dull or acute, which were seated in branches of the lumbo-sacral nerves, and especially in the uterus, pains which appear or become exaggerated at the menstrual period, and may at first sight simulate dysmenorrhœa proper." Another condition for success in use of apiol consists in choosing a time for its administration corresponding to a menstrual period. If the woman has not properly calculated the period, we may be enabled to discover it by noticing the sympathetic derangements which occur under these circumstances.—*Edinburgh Med. Journ.*, Aug. 1864.

21. *Counter-Irritation with Tincture of Iodine in Neuralgia*.—In a clinical conference at the Children's Hospital in Paris, M. Bouchut relates several cases which illustrate the efficacy of this mode of counter-irritation in cases of neuralgia.

The first case related was that of a lady, aged fifty, who for six months had been prevented by intercostal neuralgia from wearing stays. The painful region was painted over every day with tincture of iodine during a week, and at the expiration of that period a complete cure was effected.

Another, and very corpulent lady, had for three years suffered from a stitch in the eighth intercostal space, in front of the short ribs. The same treatment was instituted, with perfect success.

A dyspeptic and hypochondriac subject affected with praecordial neuralgia, considered himself threatened with disease of the heart. Daily applications of tincture of iodine were prescribed, and the pain subsided; a relapse took place, and again the remedy, perseveringly resorted to with sufficient energy to cause desquamation, removed the neuralgia, which then disappeared altogether.

In some cases of obstinate intercostal neuralgia the patients imagine the symptom to be the indication of pulmonary tuberculosis. A lady, subject to bronchitis, had for twelve months suffered from a neuralgic pain of this description, and conceived herself to be consumptive; she resorted, by advice, to the Eaux Bonnes, but returned to Paris without having experienced any improvement. M. Bouchut applied the tincture of iodine, relieved the pain, and the much-dreaded thoracic disease was cured at the same time.

Neuralgia of the breast is to many women a cause of very great uneasiness, especially when the organ contains the small indurated lobules which M. Velpeau designates under the denominations of adenoma, or irritable tumour of the mamma. In these cases the patients are haunted by the fear of cancer, and M. Bouchut has had several opportunities of testing the efficacy of the tincture of

iodine; applications daily repeated for eight or ten days have often succeeded in calming the pain, and in reassuring the patients.

In another case of a singular nature the neuralgia was accompanied by delusions of the sense of hearing, and the pain was so intense that the sufferer, tormented by hostile imaginary voices, and much alarmed by her symptoms, seemed bent on self-destruction. M. Bouchut removed the pain in a few days with the tincture of iodine, and this lady has since recovered from her melancholy mental condition.

M. Bouchut adduced several cases from which it appears that all varieties of neuralgia may be benefited by the treatment he recommends.

A little girl was afflicted with supra-orbital neuralgia; for three days in succession tincture of iodine was applied over the brow to a surface not exceeding the size of a sixpenny piece, and a cure was effected.

M. Bouchut further related two instances of hemiergasia, with photophobia and vomiting, in which the symptoms yielded to the same remedy. He also brought forward a case of sciatica observed in a naval officer; the pain was chiefly apparent at the head of the fibula and near the tendo-Achillis. Both regions were touched with the tincture, and the sciatica disappeared.

Blistering might possibly have proven equally beneficial; but the application of blisters is not always possible, and tincture of iodine is a valuable and convenient substitute.

Thus, when M. Bonchut was attached as physician to the Hôpital Sainte-Eugénie, he was consulted by a lady, residing at Charenton, for neuralgia in the occipital region. The patient was naturally desirous of preserving her hair, and instead of a blister, tincture of iodine was prescribed. The desired effect was produced after desquamation of the cuticle, and the hair was not injured.

As an instance of numerous and successive attacks of neuralgic pains, we may adduce the instance of a lady who, during her monthly period, wearing a crinoline and insufficient under-clothing, caught cold; the menses were checked, and retro-uterine haematocele followed. She was treated in an appropriate manner, and recovered her health; but pains supervened in the pelvis, between the shoulders, and in the intercostal spaces. The inter-scapular neuralgia had lasted eight months, when by M. Bouchut's advice, tincture of iodine was applied every day for a week; the treatment was very painful, but its results were perfectly satisfactory. Iliac neuralgia subsequently occurred; the same remedy was resorted to, but not with sufficient perseverance to secure permanent relief. Indeed, the method cannot be successful unless a predetermined action is induced, which hitherto can only be estimated by desquamation of the cuticle.

This is not a new mode of treatment. In pulmonary consumption, and in chronic pleurisy, the same procedure has been highly recommended for the relief of the pains which frequently accompany these affections. The method was introduced into practice by M. Blache, has since been very generally adopted, and is now acknowledged to be highly serviceable. This eminent practitioner, and also M. Van Holsbeek, in Belgium, and M. Magne, in Paris, have substituted, with much benefit, tincture of iodine for the blisters formerly applied around the orbit, for the purpose of removing the photophobia which accompanies serofulvous ophthalmia, and interferes with the needful inspection of the eyeball. This object is most satisfactorily attained by painting over the lids, forehead, and temples every second day with the tincture, and the tendency of blistered surfaces in hospital to become the seat of diphtheria is thus ingeniously neutralized.

The efficacy of tincture of iodine for the cure of arthritis and of chronic articular rheumatism is well known to our readers. "These applications made morning and evening, once a day, or once every other day," says Boinet, "operate favourably on several of the elements of disease of the joints, *promptly allay pain*, and hasten the absorption of effused liquids." The same author remarks that by this method alone he effected a cure in two cases of chronic sciatica which had lasted the first four, and the second six months.

We may, however, be permitted to observe that this local medication has been more or less suggested by the idea of the specific virtues of iodine for the cure of serofula, tuberculosis, and rheumatism; indeed, in most instances the

general treatment simultaneously prescribed bears witness to this pre-occupation, and on this point the originality of M. Bouchut's views becomes more apparent. In prescribing as a general rule tincture of iodine locally, this practitioner has not in view the removal of a diathesis; he takes into consideration the pain only, and represents tincture of iodine solely as a means of allaying the suffering and as a mere counter-irritant.

Indeed, counter-irritation is the method of treatment which for centuries has been chiefly resorted to in neuralgia. Thus, congestive irritants, such as mustard; vesicants (cantharides and ammonia); ulcerative irritants, such as clematis, certain varieties of ranunculus, euphorbia, lathyrus, nettles, croton-oil, tartar-emetic ointment, &c.; other irritants, viz., delphinia, colchicina, veratria, which without causing any redness of the skin induce a thrilling sensation, which Mr. Turnbull not inaptly compares to the action of electricity, electricity itself, especially inductive; acupuncture, escharotics, and the essential cantry, are all obviously counter-irritants, and each has been, and is still, found occasionally efficacious.—*Ranking's Abstract*. Vol. XXXIX.

22. *A Peculiar Form of Neuralgia not yet described, excited by a Desire to pass Water and by Micturition.* By Dr. PUTÉGNAT, of Lunéville.—The following two cases, out of six published by the author, will give an idea of this peculiar neuralgia, which consists, on the one hand, in a special sensation in the bladder, and on the other, in symptoms of a neurosis of the ulnar nerve.

CASE 1.—M. X—, aged fifty, with chestnut hair, of a nervous and sanguine temperament, very abstemious, in affluent circumstances, leading a very active life, occupying very healthy apartments, free from all diathesis, except a slight rheumatic affection, liable to coryza in cold, damp weather, has never had any other nervous complaint beyond headache and occasional gastralgia, after eating dressed salads or raw fruit.

From time to time, at varying intervals of weeks, months, and even years, without any apparent physical or moral cause, in all electric, barometric, and thermometric conditions of the atmosphere, as soon as his bladder was full, and he had a strong desire to pass water, he feels along the urinary passages, especially in the perineum, a peculiar sensation of numbness, not very painful, but acute, burning, lancinating, and unpleasant from the accompanying sense of prostration. This strange sensation next affects the shoulders, comes down both arms, along the course of the ulnar nerve only, and gives rise in the forearm, the little and the ring fingers, to the same sensation as when the ulnar nerve is strongly compressed at the elbow. The pain is more acute on the left than on the right side, lasts about twenty or thirty seconds, and after diminishing gradually, disappears without leaving any trace behind it.

CASE 2.—M. X—, of Lunéville; living in healthy rooms; very active; easily moved and excited; subject to headaches and to rheumatic pains; free from any diathesis; very abstemious; complains, for several successive days, but at irregular intervals, and without any known cause, of a strange sensation along the outer border of the left forearm, on the inner side of the thumb and the outer surface of the index finger especially. This sensation he compares to the one produced in the two last fingers of the hand by compression of the ulnar nerve at the elbow.

The painful sensation only comes on whenever he has a strong desire to pass water, persists during micturition, and ceases completely immediately afterward.

On analyzing the six cases of the author, we find four of them to have occurred in females. The mean age of the patients is forty-six: the oldest being fifty-two, and the youngest thirty-six years old. They are all in easy circumstances; five occupy healthy apartments, the sixth alone, damp rooms on a ground-floor. Three patients have had gastralgia; the fourth, sciatica, and great troubles have shaken his nervous system; the fifth is subject to violent headaches; and the sixth, a female, seems to have epileptiform seizures, and has a double neuralgia. From the above, then, it may be concluded that neuralgia, and great nervous excitability, are predisposing causes of this strange neuralgic affection.

In one of the four female patients the catamenia had ceased; in three they had not, and in two of these the neuralgia showed itself before and during the menstrual periods.

Uterine congestion seems then to be a predisposing cause also.

Four of the six patients had had rheumatic pains; but the other two, having never suffered from such pains, cannot be considered as the exciting cause of the neuralgic affection.

The desire to pass water, and especially micturition, bring on the sensation, which only appears at those stated times, and it reaches its maximum intensity at the beginning of micturition. It has all the characters of neuralgia, and can even aggravate, as in one case, an already pre-existing neuralgia—that of the median nerve.

As to the precise seat of the sensations, we find them affecting the four extremities of one patient, but the upper limbs only of the remaining five. In three cases they simulate to perfection neuralgia of the ulnar; and in two they are felt in the tips of all the fingers. In one case they coincide with and intensify pains in the course of the median; and lastly, as in the first case we have given above, they are felt in the distribution of the left radial nerve.

The first patient complains of pain in both shoulders, especially the left; the fourth, of pain in both arms and hands, but chiefly in both breasts, and in the left breast more than the right; the sixth, again, of pain in both forearms and hands, but more marked on the *left* side. Hence, the left side of the body would seem to be either the only one affected, or the one most affected.

The patients always distinguished clearly the special painful sensations felt in the urinary passages, from the normal sensations due to a distension of the bladder and the subsequent desire to pass water.—*Ranking's Abstract*, Vol. XXXIX., from *Gaz. Hebdom. de Méd. et Chirurg.*, April 15th, 1864.

23. Ataxie Locomotrice Progressive.—VIDAL (*Gaz. des Hôpits.*, 127, 1862), DUGUET (*L'Union Méd.*, 122, 1862), and HERSCHELL (*Bull. de Thérap.*, Oct. 1862), record cases of this successfully treated by nitrate of silver. Vidal's patient was æt. 45, addicted to sexual excess. The lower extremities alone were affected. He had constant hyperesthesia of the skin, with diminished tactile sensibility; loss of muscular sensibility, without impairment of muscular power; paralysis of the sphincter ani and of the virile power. The movements of his legs were unsteady and not co-ordinated; he could not walk if his eyes were closed. After taking argenti nitr. in daily doses of one to two-thirds of a grain for about two months, he recovered to a great extent. Duguet's patient was a female, æt. 39, who had been much weakened by frequent losses of blood, and became very anæmic. Epileptic attacks ensued, and recurred several times. It was now found that she had the symptoms of ataxic loc. progr., but limited to the right arm and leg. The movements of both these limbs were quite un-co-ordinated; the patient was quite unable to walk. The tactile sensibility of the whole right half of the body was very dull, but that of temperature was normal; electric sensibility and contractility were not impaired. Amblyopia existed, and the mental faculties were weakened. After three months' treatment with nitrate of silver the patient had in a great measure recovered the use of the right arm and leg, her memory and speech had much improved, only the vision was in nearly the same state. Herschell's patient was a rope-maker, æt. 47, who was almost completely amaurotic, had nearly lost the power of motion and sensation in his lower limbs, and to some extent also in the upper. He was completely restored after about two months' treatment.—*Sydenham Soc. Year-Book*, 1863.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

24. Causes of Hernia.—Mr. J. A. KINGDON read a paper before the Royal Medical and Chirurgical Society (June 28) the object of which was to call in

question the accuracy of the prevailing opinions concerning the causes of hernia. Instead of its being due almost entirely to mechanical causes, as most writers since the time of Scarpa have held, the author endeavoured to prove that hernia was the result of an abnormal condition of the peritoneum in its entirety, either from congenital malformation or inherent disposition to be relaxed. Without disputing the majority of the arguments that favoured the mechanical theory, the author attempted to show that mechanical causes could not operate without antecedent derangement of the peritoneum. So long as the mesenteries remained unrelaxed, in healthy bone, and with their normal attachments, the author held that hernia not only did not, but could not, occur, and that there was no disposable force that could stretch the mesenteries and dislodge the viscera. But when, from congenital defect or subsequent derangement, the mesenteries allowed the intestines to descend in the cavity of the abdomen below their proper sphere, then mechanical causes could act—then the arguments of those who advocated the mechanical theory would apply; protrusion would then be due to loss of equilibrium between the muscular parietes and the rings, but not till then. The author further attempted to show that hernia was fundamentally an affection of the peritoneum generally, by pointing out that the condition of the parietal layer determined the kind of hernia—*i. e.*, the aperture through which it escaped. The facts and arguments in support of these views were set forth in the paper.—*Med. Times and Gaz.*, July 30, 1864.

25. *Origin, Structure, and Mode of Development of Multilocular Cysts of the Ovaries.*—Dr. Wm. Fox read a communication on this subject before the Royal Medical and Chirurgical Society (June 28). The first division of the paper consists of a *résumé* of the views heretofore held with regard to the origin of these cysts. The author considers that the opinions hitherto expressed on this point may be divided into two chief classes. 1. Those which attribute the cysts of the ovary either to morbidly affected Graafian vesicles, or to secondary formations from these structures. 2. Those which ascribe the multilocular forms to a morbid process arising in the stroma of the ovary, independently of the Graafian vesicles. Under the second category there is a great variety and discrepancy of opinions. With regard to the former it has long been doubted whether the number of the Graafian follicles normally existing in the ovary is sufficient to account for the whole of the cysts sometimes found in these tumours; while the proof of any fresh formation of Graafian vesicles taking place in the adult has hitherto been of a very dubious kind, nor has any account been furnished of the mode in which secondary cyst formations proceed from them. The author has studied these conditions in fifteen of the so-called “colloid cysts” of the ovary, for the opportunities of examining most of which he has been indebted to the kindness of Mr. Spencer Wells. He believes that all primary cysts of the ovary originate in the destruction of the ovum and subsequent accumulations of fluid in the follicle, the *membrana granulosa* acting as a secreting structure. From these cysts secondary cysts may originate in various ways, all of which, however, may be referred to one common type. Class A.—Cysts give off long tubular processes, lined by an epithelium similar to that of the cyst whence they spring; one cyst may give off two or three such processes at various parts of its circumference. These undergo constrictions in their course, and thus form secondary cysts. These processes and the cysts from which they spring are most easily found in the more dense parts of the stroma. Class B.—Thin-walled cysts give off diverticula analogous to those by which the lungs, the thyroid, and some other glandular organs, both of the gusto-pulmonary and genito urinary system, originate in the embryo. These diverticula, when open by a narrow neck into the cavity of the parent cyst, expand as large pouches on its external surface, protruding into other and adjacent cysts. The neck may either expand into a large opening or may become constricted, in which latter case the original communication is destroyed. One cyst may in this manner give off numerous diverticula. These varieties (A and B) usually coexist in different parts of the same tumour. They were found by the author in three out of the fifteen tumours examined by him. They give rise to very compound structures, but not to the

dense masses to which the names of "alveolar degeneration," "cystoid disease," and "adenoid tumours" of the ovary have been given. This variety (or Class C) results from the formation, on the inner surface of the cyst wall, of a series of tubular glands, analogous to those of the uterus, or the crypts of Lieberkühn, or the glands of the stomach. They are formed by the (1) epithelium lining, the parent cyst becoming stratified, and in its superficial layers assuming a columnar character. (2) Into this stratified epithelium, papillæ formed of connective tissue spring from the stroma of the ovary, in each of which a loop of vessels is formed. A series of densely-clustered villi is thus produced, which are converted into tubular glands by the growth upwards around these bases of the stroma of the ovary. The glands may become compound at their bases by secondary villi arising in them. They may be converted into simple cysts by the closure of their orifices; but more commonly the upward growth of the stroma surpasses that of the villi in which their summits end, and the glands become completely shut off and inclosed in the stroma, forming groups of a very compound form, of tubular structure, lined by a secreting epithelium imbedded in the wall of the parent cyst. When distended by further secretion they form the smaller and larger multilocular cysts scattered on the inner wall of the parent cyst. Other modes of cyst-formation resulting in dense cystoid masses were traced by the author to these structures. Class D refers to the cyst found in the cauliflower papillary or dendritic growths which spring from the interior of parent cysts. These growths originate in a number of delicate papillæ growing from a common basis, and uniting to form larger masses. They consist of a delicate stroma, derived from that of a parent cyst-wall, a loop of vessels, and a covering of epithelium. The irregularity of their growth causes spaces to be inclosed by them, lined by a secreting epithelium, and which, when completely shut off, become cysts. Various illustrations were given of this process. The author considers that in no case are the secondary cysts in the cauliflower growths of the ovary derived from single epithelium cells. The author then referred to the observations of Drs. Pflüger and Billroth on the origin of the Graafian follicles from tubular structures found in the embryonic condition of the ovary; and though not fully able to corroborate all Dr. Pflüger's views from his own observations, he has convinced himself that the Graafian follicles originate in tubular structures. He regards these cysts as resulting from a renewal in the adult of the early mode of development of the Graafian vesicle with various morbid aberrations from the type of embryonic growth, and thinks they must therefore be placed in the same category with other cystic tumours growing in structures having tubular glands and ducts, especially with those of the mamma, testicle, and thyroid gland. He regards the cysts mentioned under Class D as presenting essentially the same type, inasmuch as the large papillary and cauliflower masses can only be regarded, similarly to the Haversian fringes of synovial membranes, as everted glandular structures. He has not had any opportunities of examining any multilocular cysts of the ovary containing dermoid structures; but, inasmuch as these have been shown to contain both normal hair follicles and sebaceous and sudoriparous glands—all of which structures are the frequent seat of cyst formations—he believes that they will be proved to follow the same laws of growth as the colloid cysts. The author, from chemical examinations of the fluid contents of the cysts, has been led to regard the so-called colloid matter found in them, as the result of alterations depending on the varying conditions of pressure under which they are secreted from the inner surface; and he believes that this matter cannot be considered as the result of any special form of degeneration of the tissue of the ovary. The method which the author has pursued in studying the development of the cysts of the Classes A C D has been to make sections in the recent state with a Valentin's knife through the various parts of the stroma. The glands of Class C are best displayed by sections made vertically to the inner surface of the cyst-wall. Observations on Classes C and D are much facilitated by hardening the tissues in chromic acid solution of 2 per cent., and subsequently treating sections made by a sharp razor with liquor of soda and glycerine.—*Med. Times and Gaz.*, July 30, 1864.

26. *Influence of a Long Course of Nitric Acid in reducing the Enlargement of the Liver and Spleen that sometimes results from the Syphilitic Cachexy.* The enlargement which Dr. G. Budd refers to, is that which has been latterly described as due to amyloid degeneration. The most striking examples of it are seen in the victims of serofulous or syphilitic caries. Three cases are related in which m_{xx} of dilute nitric acid were taken ter die for a period varying from fifteen to four months, without inducing excessive acidity of the urine or any inconvenience attributable to undue acidity of the stomach. Sarsaparilla, iron, or bark, were conjoined with the acid. The result of his experience leads Budd to conclude that when the liver and spleen have become diseased in the manner specified, in sequel to protracted syphilitic disease of the bones, nitric acid, long taken, has a remarkable influence in gradually effecting the removal of the morbid deposit to which these organs owe their increased size, restoring the organs to a more healthy condition, and improving the general health. The cases further afford a strong presumption that nitric acid, taken earlier, would prevent the disease of the abdominal glands, which, when established, it tends to remedy. It is, however, essential that the disease of the bone, on which the enlargement of the liver and spleen is consequent, should be arrested; if this cannot be effected, the malady, though even then its course may be retarded, usually makes progress, and life is cut short by renal disease, which very often accompanies that of the liver and spleen. Budd suggests that a long course of nitric acid may have influence in remedying and preventing glandular enlargements, chronic ulcers, and other forms of serofulous disease. He is persuaded that in tuberculous disease of the lung nitro-muriatic acid, long taken, tends to prevent the further deposit of tubercle.—*Sydenham Society's Year-Book, 1863, from Brit. Med. Journ., Sept. 5, 1863.*

27. *The Efficacy of Phosphate of Lime in Periostitis.*—The *Journal de Chimie Médicale* relates two cases of osteitis, attended with intense pain, in which Professor Piorry resorted with much benefit to the exhibition of phosphate of lime. In one patient the tibia and humerus were the seat of a circumscribed tumefaction and severe nocturnal pain. On superficial examination the osseous structures seemed to have preserved their natural consistency, but plessimetric percussion of the affected parts betrayed a loss of elasticity, and an increased sonorousness of the bones. The precedents of the case being of a nature to indicate the presence of the syphilitic taint in the system, the professor prescribed half a grain of protoiodide of mercury night and morning, fifteen grains of iodide of potassium three times a day, and the application of anodyne poultices. This treatment was steadily persevered in for three weeks, but the pain continued with unabated violence, when M. Piorry, taking into account the swollen and softened condition of the bones, conceived that a couple of drachms of phosphate of lime exhibited daily, concomitantly with the iodide of mercury, might possibly prove advantageous. This treatment was therefore instituted, and the issue of the case justified the professor's surmise. In the course of forty-eight hours the osteocopes had much decreased, and disappeared altogether after an interval of a week. The patient being at the same time an anaemic subject, with a small heart, contracted liver, and a weak pulse, which failed when the arm was kept in a raised attitude, tonics and a generous diet were likewise resorted to.

The second patient complained of excreting pains in the left temporal region, which were at first attributed to neuralgia of the fifth pair of nerves, and treated accordingly, but without benefit, by the application of blisters dressed with morphia, and belladonna and opium internally. On closer inspection, M. Piorry discovered, on parting the hair, which was very thick and concealed for a time the true nature of the case, a considerable periosteal tumour at the base of the parietal bone. In this instance, also, the plessimeter revealed more sonorousness and less elasticity than on the opposite side of the head. The patient, however, contended, and nothing in her previous history disproved her affirmation, that she had never been affected with any symptom of venereal disease. A drachm of phosphate of lime was exhibited night and morning, and

the pains decreased in the course of four days, and in a short time a cure was effected.

In both these cases, the reader will observe that the plessimeter was used to discover the softening of the bony structures, and that in the patient whose previous history pointed to syphilis, the use of the calcareous phosphate was in nowise incompatible with the administration of mercurial preparations. We may further add, with the editor of the *Journal de Chimie Médicale*, that the appropriate salt of lime is the combination obtained by the precipitation by ammonia of a solution of the phosphate in muriatic acid; the deposit should be carefully washed, and preserved in a humid condition.—*Dublin Med. Press*, Feb. 24, 1864, from *Jour. de Méd. et Chir.*

28. *Treatment of the Bites of Venomous Reptiles and Insects, and of Dissection Wounds.*—Dr. JULIUS LEMAIRE highly extols the efficacy of cauterization with phenic acid in the treatment of all poisoned wounds. He states also that moist gangrene may be arrested by the same application. M. L. claims that in all these cases cauterization by phenic acid is more effectual than by the actual cautery, or by any other caustic.

Two or three drops of the acid applied to a puncture are sufficient to arrest the dangerous effects of the poison. In cases of bites or wounds the acid should be applied to the whole of the wounded surface.—*Le Moniteur Scientifique*, Aug. 1, 1864.

29. *Successful Primary Amputation at the Hip-Joint.*—Mr. JAMES SPENCE records (*Edinburgh Medical Journal*, July, 1864) the following very interesting case of this:—

"On the 3d of September, 1863, Robert Davidson, aged 12 years, was thrown from a truck which had been suddenly set in motion, and fell in front of it, both wheels passing obliquely over the upper part of the left thigh just below the pelvis. The accident happened at the Melrose station, and the boy was seen almost immediately by Dr. Clarkson, who adjusted the limb, and had him conveyed to his home at Newstead, about a mile distant. About two hours afterwards, Drs. Brown and Smith accompanied Dr. Clarkson to see the case. The boy had recovered in a great measure from the shock, but his pulse was still very weak. On examination, there was found a large contused flesh wound at the upper and inner part of the left thigh, exposing the muscles, which were much torn and bruised, and allowing the finger to be passed deeply into the tissues of the limb. The femur at and below the trochanters was felt to be much shattered. The foot was cold, and pulsation in the popliteal and tibial arteries extremely weak, but there had been no great amount of blood lost.

"As it appeared to the medical attendants that the boy's only chance of life was removal of the limb by amputation at the hip-joint, I was telegraphed for, and arrived at the patient's house about 9 P.M. On examination of the injury, the contused and lacerated state of the soft parts, the shattered condition of the femur, and the consideration of the great force by which the injury had been caused, left no doubt as to the practice to be pursued. I at once coincided in the opinion which his medical attendants had expressed, although, from the depressed state of the young patient, and the proximity of the injury to the trunk, the chances of success seemed very small.

"The boy's parents having given their consent, I proceeded to perform the operation under circumstances not the most favourable. The room was small, and the only light procurable was from a small lamp on the mantelpiece, and two small candles held by a non-professional assistant; a wax taper I had brought with me was kept in reserve for exigencies. I had brought Lister's abdominal compressor, but as it could not be applied so as to command thoroughly the circulation, Dr. Smith took charge of compressing the common femoral on the brim of the pelvis, and I instructed one of the patient's friends how to command the bleeding from the posterior flap, by grasping it with one hand and pressing a large sponge upon its surface. Dr. Brown took charge of the movements of the limb, whilst Dr. Clarkson administered the chloroform. When the boy was brought under its influence, I entered my knife between the trochanter

major and the anterior superior spine of the ilium, and carrying it obliquely across the thigh, brought the point out a little above the tuberosity of the ischium, cutting a short anterior flap. Dr. Brown then rotated and depressed the limb, with the view of facilitating disarticulation; but owing to the shattered state of the femur, this movement did not produce the desired effect. Fortunately, however, this caused no great delay, for my knife had opened the joint in passing across the limb; and by grasping the upper broken fragment of the bone, so as to project the head, I completed the disarticulation, and cut as large a posterior flap as I could obtain from the uninjured parts. Some vessels on the posterior flap were first secured, and then the great vessels in the anterior flap, the vein being included in a ligature. I then removed some contused and doubtful-looking portions of muscle. After all bleeding had been arrested, the flaps were brought together with sutures; and, considering the nature of the parts from which the flaps were formed, they fitted tolerably well. The stump was then dressed, and the patient placed in bed, hot bottles applied, and some stimulus given, as he was very weak. He lost very little blood during the operation, as I ascertained by carefully collecting the blood from the stone floor, when it was found to amount to less than half a small teacupful; and altogether, with what was in the sponges, to about five ounces at most. After waiting till the little patient had completely rallied from the chloroform, and had got an opiate administered, I left him in the charge of Dr. Smith, who remained with him all night, and to whom I am indebted for the following report of the progress of the case:—

Examination of Limb after Removal.—On examination of the limb after removal, the femur, from the large trochanter downwards for about two inches, was found to be broken into numerous fragments, the ragged edges of which were imbedded in the surrounding soft parts. The muscles and other structures were much bruised and torn, but there was no direct injury to the large vessels or nerves.

“4th September. During the night, patient was very restless and delirious; pulse 134, weak. A little brandy and water was administered at intervals, but was vomited. No reactionary hemorrhage of any consequence. *Vespere.* Still restless, with delirium; pulse 130. To have opiate with a few drops tinct. mur. ferr.

“5th. Restless night; pulse 130, very weak and thready; sunken aspect of countenance. Beef-tea, brandy, and milk given in small quantities frequently.

“6th. Rather better; slept a little; less delirium; pulse 108, stronger; wound has healthy appearance, except at the bruised part of the flap, which looks sloughy.

“7th. Pulse 108; sloughing action extending slightly on posterior flap; fetid sero-purulent discharge. Chloride of soda lotion; opiate.

“8th. Pulse 90; no delirium; line of demarcation formed, showing slough, rather exceeding a square inch in extent; purulent discharge copious, and less fetid.

“9th. All the stitches removed, and the flaps brought together as well as possible by strips of plaster. Pulse 100.

“12th. Sloughs separated; an attack of diarrhoea; slight delirium. Opiate.

“14th. Pulse 108; diarrhoea less; stump looking healthy. Diet for the most part milk, beef-tea, wine, with a little brandy.

“16th. Doing well.

“20th. Pulse has risen to 120; had a restless night with delirium; raw surface of stump covered with patches of whitish semi-translucent membrane of pretty tough consistence; copious purulent discharge. Stimulants given in increased quantity.¹

“21st. Pulse 120; occasional delirium; wound has same appearance.

“23d. Pulse 118; wound has less of its diphtheritic-looking covering.

“27th. Stump looks healthy, and is cicatrizing round the edges. Dressed with sulphate of zinc lotion. Pulse still high, 116; sleeps well; appetite indifferent.

“1st October. Pulse 110; doing well.

¹ “Dr. Brown informs me that diphtheria was prevailing in the district at the time.”

"4th. Pulse 102.

"From this time recovery was slow but uninterrupted. The patient gained strength gradually, with the aid of tonics, wine, etc. The femoral ligature did not fall off till 4th November, two months after the operation, having evidently been retained for some time after its separation from the vessel by the granulations surrounding it. By the middle of December the stump was healed, with the exception of a mere spot. Two or three weeks later this also had closed, and the patient was able to move about with the aid of crutches."

30. Securing Vessels by Wire Ligatures and cutting both Ends of the Wire short and leaving them in the Wound.—Five cases are recorded (*Lancet*, July 23, 1864), three of amputation of the breast for carcinoma, and two of amputation of a limb, in which Mr. BARNARD HOLT secured the vessels by wire ligatures, and cut both ends of the wire short.

In some clinical remarks Mr. Holt observed that, although in no instance were the incisions followed by immediate union through their entire extent, yet a much greater portion had healed by the first intention, and much less suppuration followed, than where the vessels were secured in the ordinary manner; and it appeared very probable that in cases of amputation of the leg and arm, the non-irritation of the wound had prevented any unfavourable result, the hospital being at the time of the performance of the operations in an especially unhealthy state from the presence of hospital phagedena, which had attacked many of the cases of ulcer and wounds. There was nothing new in the principle of cutting short the ends of the ligature and allowing them to be retained in the stump; for it would seem to have been simultaneously adopted, about 1798, by an American naval surgeon and Dr. Maxwell, of Dumfries. Hennen and other military surgeons extensively followed the practice, and it was the last-named surgeon who first suggested the use of hair ligatures. So far as the present cases went, they tended to show that as great security was afforded against secondary hemorrhage by the use of the wire as of the thread; and certainly there was less risk of abundant suppuration and of the occurrence of pyæmia than where the hempen ligature was employed. The surfaces of the wound were likewise kept in undisturbed approximation; the patient was saved the pain of removing the ligatures—a pain occasionally very severe; the suppuration was infinitely less; and in favourable cases there were great probabilities that immediate union might be secured through the entirety of the wound, the retention of the wire ligature not in the least degree militating against such a result, or giving the slightest inconvenience either immediate or remote. As a further proof of this, Mr. Holt referred to the continued good result which followed the subcutaneous tying of the veins in two cases of varicocele already reported in this journal. Mr. Holt also alluded to the probable advantage that might result in cases of aneurism where pressure had failed, but where it was desirable that a modified current of blood should be permitted to pass through the artery, by partially compressing the main artery by tying the wire loosely and cutting both ends short: the experiment seemed to be worth a trial.

31. Treatment of Acute Orchitis by Puncturing the Testicle.—HENRY SMITH Esq., Assistant-Surgeon King's College Hospital, in a case of very acute gonorrhœal orchitis, supposing suppuration had taken place, with a view of evacuating the pus, made a free incision; but to his dismay no matter escaped. Speedy relief, however, followed, and this case suggested some serious reflections. The quantity of serum and blood abstracted was too small for the cessation of pain and swelling could hardly be due to this cause, and he was led to ascribe the relief to the removal of tension by the division of the fibrous envelope of the testis.

"Influenced," he says, "by this reasoning, and by the result of this case, I determined to try the effect of puncturing the testis in similar cases; and in the next case of acute orchitis which presented, I made a deep and free incision with a sharp narrow bistoury, emitting about half a teaspoonful of serum and several drachms of blood; and no other treatment beyond a little of the common aperient mixture was supplied. The result here was as successful as in the

former; and as cases presented themselves, I adopted the same plan of treatment, reserving it, however, especially to those instances where the swelling and pain were very great. After the trial in a few cases, it was found that the success attending this practice was such as to lead me to adopt it as the usual treatment of acute orchitis; and during the last twelve months I have probably treated in this way upwards of twenty cases, with results as have astonished both myself and those numerous pupils who have witnessed the practice.

"In nearly every case so treated—and I have purposely selected the most acute—the patient has experienced the most striking relief before he has left the outpatients' room; and on the next visit, forty-eight hours afterwards, the contrast presented is so remarkable that the superiority of this plan over the old-fashioned modes of treatment is at once impressed forcibly upon the minds of those even who would naturally be prejudiced against so apparently heroic a treatment. The speedy subsidence of all the acute symptoms is due entirely to the puncture of the swollen and inflamed organ, for I have taken especial care not to prescribe anything else except a little of the common white mixture, or perhaps the use of the ordinary lead lotion, and this chiefly to please the patient.

"The only inconvenient result," he states, "I have witnessed from this treatment, was the following: An incision was made into the testicle of a middle-aged man, with the usual relief, but in a few days the scrotum began to swell, great pain was experienced, and the man was taken into the hospital. The objectors to the mode of treatment suggested all sorts of disasters, in the shape of suppuration of the testicle, &c., but on careful examination it was ascertained that the swelling consisted of a large and rapid effusion of fluid into the tunica vaginalis, which was at once evacuated, with speedy relief to the patient. In another instance I made the incision much deeper than was necessary, carrying the point of the knife nearly to the back of the organ. As much as ten ounces of blood were lost, but the testis was violently inflamed and swollen, and the only effect of the accident was to make the patient somewhat faint, but at the same time to give more speedy and effectual relief than usual."

"This circumstance may lead one to the belief that the relief is due solely to the escape of blood from the puncture; but this view is inconsistent with the fact that great relief is given when only a few drachms of blood, mixed with serum, are discharged. Doubtless the direct withdrawal of blood from the highly-inflamed testicle is of service, but my own view of the matter is, that the relief is in a great measure due to the withdrawal of the tension from the body of the testis by free division of the tunica albuginea."

In a postscript Mr. S. adds: "Since the above was written I have seen one of my old pupils who has been spending the last six months in the Paris hospitals, and he informs me that the ordinary practice at the Hôpital de Midi in cases of acute orchitis is to make a puncture in several places with a lancet; the instrument is not carried into the body of the testicle, but simply through the tunica albuginea. He describes the plan of treatment as most successful."—*Lancet*, Aug. 6, 1864.

OPIHTHALMOLOGY.

32. *Mr. Critchett on Sympathetic Ophthalmia of the One Eye from Traumatic Inflammation of the Other.*—This affection is observed principally in the young; its ordinary cause is an injury of the iris and ciliary region; very often, there is some foreign body in the eye. After some time—after a few days or many months, on an average after about six weeks—the symptoms of sympathetic disease begin in the uninjured eye. The treatment consists of excision of the injured globe on the one hand—on the other of perfect rest in a darkened chamber, &c., and occasionally of iridectomy, or when the lens has become opaque, of its extraction. According to the author's experience enucleation is of little or no use, when the sympathetic ophthalmia has once commenced. He

has also found iridectomy unsatisfactory in such cases as a means of arresting the disease; he is therefore now inclined to temporize till the disease has terminated, and then to perform extraction.

CASE 1. A girl, 8 years old, had her left eye injured by a pair of scissors; the cornea, sclerotic, iris, and lens were involved. The iris was united to the corneal wound; there was some redness and photophobia: she could, however, yet perceive larger objects. The other eye already presented symptoms of sympathetic ophthalmia. The parents refused an operation. Four months later the injured eye was soft, atrophied, and insensitive; all perception of light was lost. The disease in the other eye had advanced, and the vision was much impaired. Under these circumstances it was determined to perform iridectomy. After much trouble a little piece of iris was excised, a good pupil being formed. In the course of a few weeks there was marked improvement; but three months later there was a fresh attack of iritis, and the pupil closed again.

CASE 2. The left eye of a perfectly healthy girl, 11 years old, was injured by a percussion-cap. In six weeks the other eye presented symptoms of sympathetic ophthalmia; the left eye was, therefore, immediately removed. On its examination, a fragment of the cap was found in the ciliary region. An attempt at iridectomy in the right eye failed; during two years six operations have been performed on this eye, with the object of removing the lens and restoring the pupil. The girl, who is now 16 years old, can sew and read No. 8 Jäger. Mr. Critchett has only had one other case which ended favourably; it was the following:—

CASE 3. Four years ago a man of 22 was brought to him. The left eye was soft and atrophied. In the right eye the pupil was closed; the anterior chamber somewhat contracted, the lens opaque and partially absorbed, the tension somewhat less than the normal. From the history it appears that when eight years old he had been injured by falling on a spade; three or four months later the other eye was attacked, and had gradually progressed to its present condition. For fourteen years he had only been able to indistinctly recognize the outlines of objects. In this case Mr. Critchett extracted the lens by the upper incision; the wound healed well, but the pupil closed again. Two months later he obtained a clear space by iridectomy; since that time the patient has had tolerable vision; indeed, there is a little tendency to improvement. The author also relates two cases of operation followed by sympathetic disease. After an extraction on the left eye of a man between 70 and 80, there was a prolapsus iridis and a chronic inflammation. Three months later sympathetic inflammation caused rapid loss of sight of the right eye: good vision was, however, restored by means of the operation for artificial pupil after the other eye had been removed. The second case was that of a lady of delicate constitution, who had in one eye a perfect, in the other a commencing cataract. Extraction of the mature cataract was followed by a slight prolapsus of the iris, which was touched with nitrate of silver; severe pain and long-continued irritation followed. Three weeks later sympathetic ophthalmia attacked the other eye and finally induced perfect blindness.

In short, the principal points to be noticed are—

1. That the injuries which give rise to sympathetic ophthalmia generally implicate the ciliary region.
2. That the effects of this inflammation differ in important points from those caused by other forms of iritis.
3. That neither local nor constitutional treatment, nor yet surgical operations, exercise any beneficial influence over the eye.
4. That operative treatment should be delayed till all inflammation is over, but that even then the prognosis is very dubious.
5. That, having respect to the irrepressible inflammation and the danger of total blindness, it would perhaps be better in injuries of the ciliary region, which cause long-continued irritation, to remove the injured eye before the other has been attacked with inflammation.

Mr. Critchett's paper was read at the meeting of ophthalmic surgeons at Heidelberg. In the discussion that followed, von Gräfe remarked that the author had perfectly described one form of sympathetic ophthalmia, that of the

dreaded iridocyclitis, but that another and less dangerous form, that of iritis serosa, was also observed. All the symptoms described by Mr. Critchett as peculiar, depend upon the early implication of the ciliary body: the early appearance of large vessels in the iris is also an important symptom. Von Gräfe considers as conditions for the occurrence of sympathetic ophthalmia—1. The presence of foreign bodies, which act as constant sources of irritation. 2. The continuance of iridocyclitis in the injured eye often characterized by abnormal sensibility of the ciliary region to the touch. 3. Recurrent intra-ocular hemorrhages with rapid changes of tension. 4. Calcareous deposits. In respect to the treatment, von Gräfe considers that when sympathetic ophthalmia has once broken out, enucleation should always be recommended. Foreign bodies of any size should be boldly extracted from the interior of the eye before any sympathetic disease has commenced. In other cases, for example where iridocyclitis persists, or where blood is effused in the injured eye, enucleation may be replaced by the seton passed through the vitreous, for a sympathetic affection of the other eye has never been observed during acute purulent processes from panophthalmitis.

Donders had seen cases in which the second eye became without any visible organic disease, affected with the severest photophobia and entirely useless; immediately after enucleation (a foreign body was found in the globe) the vision of the other eye became quite normal. Von Gräfe had also observed such cases of nervous irritation; he considers that they should be carefully distinguished from those of sympathetic ophthalmia, because, even when long continued, there is no organic disease, and the prognosis is never unfavourable.

In answer to a question by Warlomont, von Gräfe mentioned that he was convinced that sympathetic ophthalmia sometimes resulted from chronic choroiditis: thus, after enucleation of an eye which had become blind from chronic choroiditis, the acuteness of vision of the other eye which had become secondarily affected with choroiditis and opacities of the vitreous, immediately increased from $\frac{1}{2}$ to almost 1, although three months' previous treatment had not had the slightest effect.

Horner and Pagenstecher adduced the formation of excavation of the disk as a form of sympathetic disease, and Liebreich described a peculiar form of quasi-sympathetic amblyopia, characterized by photophobia, central acuteness of vision, and rhythmically periodical obscurations of the visual field (continuing from a half to one minute). The latter state is, according to him, an exaltation of a physiological process, for such periodical variations are observed by a healthy person when one eye is firmly closed.—*The Ophthalmic Review*, July, 1864, from *Klin. Monatsbl. f. Augenh.*, i. 440.

33. *Subcutaneous Injections in Ophthalmic Surgery*.—Prof. VON GRAEFE lately delivered a series of clinical lectures on the employment of subcutaneous injections in ophthalmic surgery, of which we propose to give a brief abstract. His experiments have been only made with the acetate of morphia and the sulphate of atropia. The most favourable situation for making the injections is the middle of the temporal region, and it is this which the Professor chooses under all circumstances, unless there be some special indication, such as neuralgia or spasmodic phenomena, which makes it probable that some other point may be preferable. The integument should be well raised from the subjacent parts, the canula should be pushed into the cellular tissue, and the skin should be closely applied around the canula, so as to prevent the return of the liquid injected. The quantity of acetate of morphia employed in Graebe's experiments varied from the tenth of a grain to half a grain, a fifth or sixth of a grain being the usual quantity. The solution contained four grains of the acetate in a drachm of distilled water; it should be neuter, or very feebly acid. The physiological action is the same as when morphia is taken into the stomach, but in general it is better marked, and consequently the amount injected ought to be smaller by about a third than the quantity which would be administered internally. The action on the iris is interesting. Often at the end of a minute, sometimes not for half an hour, the special contraction of the iris (*opium-myosis*) manifests itself. This contraction is best observed by comparing the dimension of the

pupils with a moderate light. The degree and the duration of the myosis vary remarkably; in a large number of cases it remains well marked for several hours, and disappears slowly. Sometimes, in very irritable persons, spasm of the muscle of accommodation of the iris takes place; when this phenomenon occurs, it is at an advanced period, at the end of the stage of irritation. The most important therapeutical indications of subcutaneous injections of morphia are, according to Graefe, the following: 1. In the case of traumatic injuries which have involved the eyeball, soon after their occurrence, and when there is severe pain; for instance, after the penetration of foreign bodies, superficial burns or wounds, the pain is more speedily allayed by the subcutaneous injection of morphia than by the instillation of solution of atropine between the eyelids. Professor Graefe is opposed to the application of leeches after the extraction of foreign bodies, after contusions, and after penetrating wounds; he looks upon them as more likely to produce than to prevent inflammation and suppuration. 2. After operations on the eye, when they are followed within a short time by intense pain. 3. In the neuralgia of the ciliary nerves which accompanies iritis, glaucomatous choroiditis, and several forms of inflammation of the cornea. 4. As an antidote for poisoning by atropine, an action which was pointed out by Mr. Benjamin Bell in 1857. 5. In neuralgic affections of the terminal branches of the fifth pair in the frontal region, not dependent on an affection of the eye. 6. In different forms of reflex spasms, such as spasm of the eyelids in traumatic keratitis, and spasmodic contraction in the course of the facial nerve.

In the case of injections of atropia, the greatest prudence is necessary. In some persons the sixtieth of a grain is sufficient to give rise to general symptoms. In general, the first dose injected should not exceed that quantity; it may afterwards be gradually increased to the twentieth of a grain. According to Professor Graefe, the occasions for the employment of atropia in injections are very limited; and to produce the mydriatic effect, the form of instillation is preferable. Even when a full quantity is injected, the dilation of the pupils is moderate, and the power of accommodation of the iris is not superseded, whilst the desired effect is obtained by much smaller doses introduced between the eyelids. In neuralgia, injections of atropia do no good, in spasmodic affections their effect is very doubtful; so that their employment seems to be limited to cases in which the conjunctiva would not tolerate the presence of the atropia.

—*Edinburgh Medical Journal*, July, 1864, from *Bull. Gén. de Thérup.*

MIDWIFERY.

34. *Spondylolisthesis; with an Account of a Case of Pelvic Contraction, in which Premature Labour was induced by the Author's Method.*—Dr. ROBERT BARNES read before the Obstetrical Society of London (April 6, 1864) a memoir embracing a history of the literature of this affection and a summary of the cases hitherto recorded. It was first described, in 1853, by Kilian, who defined it as a slipping downwards and forwards of the last lumbar vertebra upon the sacrum, so that one or more of the lumbar vertebrae fall into the cavity of the pelvis, encroaching upon the space required in labour. In several cases the Cæsarean section had been necessary in order to deliver. The author added a case in which he believed this form of distortion was the cause of difficult labour. A woman, previously healthy, had been injured in the back. Considerable contraction of the pelvic brim followed. There was a marked depression in the lumbar region, and a projection internally above the promontory of the sacrum. Dr. Barnes brought on labour by this method at about the eighth month. The child was extracted by turning with some difficulty, still-born. The entire labour occupied less than five hours. The mother recovered. The remainder of the memoir was devoted to the discussion of the causes of the deformity, concerning which very conflicting views were entertained in Germany.

Mr. W. Adams observed that he had listened to the paper with great interest, as the vertebral deformity or displacement described was but little known, and

required further investigation. It seemed to him that the condition described as spondylolisthesis might depend upon several causes. Rickets might give rise to it; but this would be at once apparent by the general evidences of rickets in the development of the skeleton, distortion of the legs, etc. Caries of the first sacral bone might give rise to it; and some years after destructive disease had ceased, and ankylosis produced, the prominence forward of the last lumbar vertebra might encroach considerably on the pelvic cavity. Mr. Adams had seen a few examples of this, and had one now under his care at the Orthopaedic Hospital. In this case the girl presented extreme lordosis in the lumbar region, with corresponding projection of the stomach, and a sharp posterior angular prominence corresponding to the first and second sacral bones. In all probability this girl, now twenty-one years of age, could never have a living child, in consequence of the projection of the last lumbar vertebra into the pelvic cavity. Congenital dislocation of both hip-joints produces extreme lordosis in the lumbar region, and, therefore, would probably give rise to the condition described as spondylolisthesis; and Mr. Adams had also seen it produced to some extent by a sharp rotation movement, and lateral distortion affecting the lower lumbar vertebrae, as in a case described by him in the *Medico-Chirurgical Transactions*, vol. xxxvii. It was evident that a variety of causes might produce the vertebral displacement mentioned by Dr. Barnes, whose analysis of the cases recorded in the paper would form the basis of further observations on this subject.

Mr. Brodhurst observed that this was a subject which had not received much attention in this country. He considered that the affection in question was not a true dislocation, as it was described by the author of the paper, and that it differed materially from ordinary lordosis, and from those forms of lordosis which are produced by congenital dislocations of the heads of the femurs by some very rare forms of caries of the bodies of the vertebrae, etc.; but it was induced, he said, by softening of the bodies of the vertebrae, and especially by softening and yielding of the ligaments which unite the lumbar vertebrae and the sacrum. Thus was occasioned some displacement of the bodies of the lumbar vertebrae downwards. The positions of the spinous processes showed that caries was not the cause of this affection, as had been suggested, and a section of the bodies of the vertebrae showed this fact still more clearly. He contended that this condition was due to rachitic inflammation and softening of the osseous and ligamentous structures.

35. *Movable Kidneys giving rise to Symptoms of Pregnancy.*--Mr. E. D. DAY records (*Med. Times and Gaz.*, July 9, 1864) the following example of this:—

Mrs. W., aet. 37, applied at King's College Hospital on June 3, 1864, under the following circumstances: She was married, and had had one child five years before. Since that time she had menstruated regularly till September last, when she was much frightened by the ceiling of her room falling in. After that she missed two periods and supposed herself pregnant, and was therefore surprised at finding that at the third period the catamenia returned, and have continued regular since. She still thought herself in the family way, as, to use her own words, "she had felt the movements of the child;" but the nine months having passed without any change in her condition, she was anxious to have my opinion as to her state.

On making an abdominal examination, I found that the abdomen was tympanitic, and that there was no uterine tumour whatever, but in the right iliac fossa I felt a tumour, which slipped readily away from my hand, and upon closer examination was determined to be the right kidney. The hilum was readily felt, and the space over which the kidney could be moved was about three or four inches. On examining the left side, that kidney was also found movable, but it was not so low down as the right. It was situated just below the level of the ribs, and could be moved over an area of two or three inches.

The movements which she had considered fetal were thus clearly to be attributed to these movable kidneys.

In order to make the diagnosis more sure, I sent her into the hospital under the care of Dr. G. Johnson, who agreed in the opinion I had expressed.

36. *Placenta Prævia*.—Dr. ROBT. GREENHALGH read a paper on this subject before the Obstetrical Society of London, July 6, 1864. The author first alluded to the large mortality both to mothers and children (one in four and a quarter of the latter, which he attributed mainly to the severe and repeated losses of blood, to the delay in affecting the delivery, and the method of turning usually had recourse to in these cases. He then gave the details of twenty-four cases which had occurred in his own private and consulting practice between the years 1842 and 1864. He placed before the society several statistical tables, chiefly taken from Dr. Read's work, to show, in addition to other facts, that the expulsion of the child generally takes place before the full period of utero-gestation—premature labour being the rule and not the exception; that nature, unaided, frequently terminates the delivery with safety both to mother and child; that complete and partial artificial separation of the placenta before the birth of the child has failed in numerous cases to arrest the hemorrhage; and that these methods and turning had proved most unsatisfactory in their results. Having dwelt at some length upon these several points, he strongly advocated a close observance of the way in which nature terminates these cases with safety to mother and child. Having specified the result of his observations on that head, he confidently recommended the following plan of treatment, which had proved, as far as the limited number of cases could prove, in his hands and in those of others, far more successful, both to mothers and children, than any other method hitherto devised. It was as follows: 1st. That in any case of hemorrhage, whether profuse or otherwise, occurring after the commencement of the seventh month of utero-gestation, ascertained to be due to *placenta prævia*, artificial premature labour should be induced at once, or as soon as the condition of the patient will admit of it. 2dly. That in order to effect that end without loss of blood, an air-ball, covered with spongio-piline, be passed, collapsed, into the vagina, and then inflated so as effectually to fill that canal, while a bandage is placed firmly round the abdomen; at the same time the ergot of rye and borax are to be administered in repeated doses. He further recommended as aids, stimulating enemata, with tincture of *nux vomica*, galvanism, and friction over the abdomen. The author concluded by condemning, in the strongest terms, the use of general hygienic means and haemostatic remedies over days and weeks in these cases, which course, he was firmly convinced, was the cause of many valuable lives being lost.

Dr. BARNES observed, that agreeing generally in the principle that labour should be brought on in cases of severe hemorrhage from *placenta prævia*, a principle, he believed, commonly acted upon in London—he could not assent to much of Dr. Greenhalgh's reasoning, or concur in approving his plug. His statistical reasoning was open to criticism. He assumed two postulates: first, that the mortality in *placenta prævia* was 1 in $4\frac{1}{4}$; secondly, that the mortality from inducing premature labour was 1 in 53; and he drew the extraordinary conclusion that by always inducing labour we might substitute the low mortality of premature labour induced under selected circumstances for the assumed heavy mortality of 1 in $4\frac{1}{4}$. Now both the postulates were false, and the conclusion was manifestly illogical. The mortality of 1 in $4\frac{1}{4}$ drawn from Dr. Read's tables was a most unfair representation of the results of modern obstetrics. He (Dr. Barnes) had analyzed his own cases. Since the publication of his Lettsomian Lectures 59 cases had come under his own observation; and he drew 24 from other sources, most of these last being treated upon his (Dr. Barnes's) principles. The deaths were six only, or 1 in 14. And if he were to follow Dr. Greenhalgh in striking out the fatal cases on the ground that treatment was too late, he might show statistical results very far superior. He should have not 10 successful cases, but 77. Two of his cases died of pyæmia, having been treated by forced delivery—that is, in direct opposition to his principles; 2 were moribund when seen, and two were hopelessly anaemic. He had taken all cases as they occurred in his books without selection or arrangement, yet 26 cases fell as an uninterrupted series of recoveries, which he might fairly place against Dr. Greenhalgh's selected 10. Then as to the mortality in premature labour. Premature labour was induced under selected circumstances to avoid dangerous complications. Such cases were not to be compared with labours forced upon us by the flood-

ing of placenta praevia. This Dr. Greenhalgh disregarded. But surely placenta praevia went for something. Then the children. Dr. Greenhalgh had been fortunate. In his small series of 10 cases he had 8 living children. He (Dr. Barnes) ventured to say that a larger experience would modify this result. Many dangers surrounded the child in placenta praevia: cross-births, funis presentations, immaturity and asphyxia in utero; some were born putrid. His (Dr. Barnes's) plan was eminently adapted to secure the child. But his mortality was 63. The very method of Dr. Greenhalgh of bringing on premature labour must of itself often destroy the child, for the floodings would come on at six and seven months. And in some cases flooding did not occur until the end of gestation. These were often the most dangerous. Yet here Dr. Greenhalgh's plan was not available. And what was Dr. Greenhalgh's plan? The use of a *vaginal* plug, not differing essentially from the colpeurynter of Braun. It acted like all other vaginal plugs by exciting uterine contraction, if the uterus was excitable. But, unfortunately, in the worst cases the uterus was paralyzed. In these, where art was most necessary, the plug was useless. He was surprised to hear Dr. Greenhalgh undervalue rupturing the membranes. This simple method was in many cases quite sufficient, and no method was long serviceable without it. If, in combination with rupturing the membranes, the placenta was detached from the cervical zone, so freeing the cervix, the cervix then artificially expanded by his *cervical* dilators, and the bimanual method of turning resorted to, he was confident from large experience, that a greater measure of success would be obtained than by any other especial method. He took that opportunity of stating that the first published case of the use of the intra-uterine dilator in placenta praevia which attracted his attention belonged to Mr. Jardine Murray, of Brighton.—*Lancet*, Aug. 6. 1864.

37. *On the Application of Extreme Cold as an Anodyne in the Pain attendant on Parturition.*—Mr. J. MORTIMER LEWIS, in a paper read before the Obstetrical Society of London (May 4. 1864), stated that "an examination of the phenomena of labour, more especially in relation to the nature, duration, and intensity of the pain accompanying it, has led the author to the following conclusions: 1. The actual pain (as distinguished from the sensation of forcing) experienced by the parturient woman bears no definite proportion to the force and efficiency of what (for want of a better name) we term 'the pains' of her labour. 2. The sensation of pain is not invariably synchronous with the occurrence of uterine contraction, the effects of the latter being perceptible to the accoucheur not unfrequently, during examination, before his patient experiences the former."

"From these circumstances, taken in connection with others well known to careful observers, it may be inferred that the pain attendant on labour is more directly related to the effects of uterine contraction (perhaps mechanical force operating on nervous tissue) than to the specific muscular act itself."

"The reference of the pain to some region more or less remote from the contracting uterus or the dilating external passages (in which the seat of pain might have been supposed to be located) appears to support the last inference, whilst it clearly points to the conclusion that the pain attendant on labour is neuralgic in its character."

"Acting on this theory, the author has tried the effect of extreme cold as a topical anodyne, and the result has been so constant that, after repeated experiment, he feels confidence in bringing this new method of seeking to alleviate the pains of labour before the society, and suggesting its adoption by the profession. The method is applicable in all cases, independent of the condition of the patient, cold being already in use as a powerful means of exciting the uterus to contraction in cases of extreme exhaustion. It is perfectly free from the dangers so inseparable from the most cautious use of anaesthetics. It is perfectly manageable, and may be safely confided to a nurse; and its *rationale* is in strict conformity with the well-known principles of physiology. It is not intended to remove, but to alleviate, the pain attendant on parturition. It will be found that the power of the uterine efforts is generally increased, without any corresponding increase in the attendant suffering, the patient being not unfrequently

under the impression that the pain has ceased when the presentation continues to evidence the continuance of the expulsive force. This has been very remarkable in some of the cases, the pains appearing to be shortened, when examination has proved them to be prolonged. The actual pain is sensibly diminished, the patients expressing themselves variously, but to the general effect that they are relieved of half their suffering.

"The method of the application is of the greatest importance. The cold must be extreme, or it is of little if any service, and it must be persistent.

"An apparatus was exhibited consisting of a flat tin box, which is filled with a freezing mixture and applied to the seat of the pain.

"Dr. Oldham believed some difficulty would be found in determining what was the seat of pain. Madame Boivin referred the pain during her own labours to the neck of the uterus."

38. *A New Mode of Treatment of Vesico-Vaginal Fistula.*—Dr. ALFRED MEADOWS, in a paper read before the Obstetrical Society of London (May 4, 1864), contended that the usual practice of keeping the patient in bed for two or three weeks after the operation for the cure of vesico-vaginal fistula is unnecessary, and that, on the contrary, she may be allowed with perfect safety to go about as usual immediately after the operation. The author showed that the reason given for the former practice, viz., that the parts should be kept quiet, is as fully attended to in the plan suggested as in that usually followed, because the movements of the body do not interfere with the quietude of that particular portion of the floor of the bladder where the fistula existed, there being no muscles in this region which can by their attachments prejudicially affect the part in question. With regard to the second consideration—that the urine should be kept from the surface of the fistula, either by the constant employment of the catheter or by its frequent use—the author exposed the fallacy of this argument by briefly reviewing the circumstances which exist after every operation of this kind. At first the bladder is quite empty, but, as urine gradually flows into it, the organ becomes slowly distended; and the very fact of this distension taking place by the uniform pressure of the urine, proves that contact of that fluid with every part of the bladder-wall cannot be avoided: no position of the patient can prevent it, and consequently the recumbent posture is not needed on this account, nor is the use of the catheter of any service. Two cases were detailed in which the plan here suggested by the author had been carried out with perfect success. In one, where chloroform was not administered, the patient went about immediately after the operation, and followed her usual avocations. In the other case, the patient had chloroform, and on this account chiefly she kept in bed that day; but the next day she was allowed to go out, and her cure was equally complete. In both cases the opening was large enough to admit the finger easily; and in one of them it was situated far in the vagina. The author recommended the use of many sutures, merely twisting them, and without either clamp or shot; he also advised that they should be allowed to remain some time to secure firm union, their presence occasioning no inconvenience. One of the cases cited was further remarkable, inasmuch as by the process of sloughing which had previously taken place no trace of the uterus could anywhere be discovered, and the patient has continued for some time past to menstruate through the bladder.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

39. *Chronic Poisoning by Tobacco.* By Dr. LE BRIERT.—On the 7th of February, 1864, I was sent for to see a woman, the wife of a miller, forty-six years of age. She had originally been of sound constitution, had been married twice, and had had five children. She had suffered much from anxiety for a long time, but four years ago she had additional grief from the loss of a daughter eleven

years old, to whom she was devotedly attached. From that time she had no peace of mind. She sought every means of distraction, drank to excess, and, from a singular depravation of taste, took to eating tobacco of every kind, to the amount of about two francs' worth a week. When I arrived the patient was almost speechless: her voice was hoarse, and she could only murmur some inarticulate sounds. The respiration was difficult, sighing: the pulse was weak and slow. The heart scarcely beat. The pupil was dilated and insensible to light; the eye had a haggard appearance, and blindness was almost complete. Deafness was not complete, but hearing was very dull. The face was emaciated, pale, and stupid-looking; the tongue was tremulous, red, and dry. Swallowing was very painful, owing to spasms of the throat. The belly was retracted. The feces, resembling the excrements of sheep, had for long only been passed after the use of enemata and purgatives; at first, on the contrary, purging had been present, and she had often vomited. Soon, however, her appetite had failed, the gastro-intestinal walls had been, so to speak, affected with stupor, like all the rest of the body, and the period of prostration arrived. The urine was passed involuntarily. There was weakness, cold sweat, sleeplessness. Under these circumstances I could do nothing; I merely ordered soup, coffee, and acid drinks. When I saw the patient two days afterwards, her voice was suppressed like that of a cholera patient, deglutition was impossible; the chest scarcely moved; the respiratory murmur and the movements of the heart were almost inaudible. All the organs were in a manner stunned by the influence of the tobacco. Death occurred a few hours afterwards.—*Edinburgh Medical Journal*, Aug. 1864, from *Gazette des Hôpitaux*.

40. *Poisoning by Tobacco-Leaves.* By Dr. NAMIAS.—Some time ago, M. Decaisne laid before the Academy of Sciences a memoir on "The Intermittence of the Heart and Pulse occasioned by excessive Tobacco-Smoking," in which he arrived at the conclusion that the abuse can produce in certain persons a condition which may be called narcotism of the heart, and which manifests itself by intermittence in the beating of the heart and in the pulsations of the radial artery. The importance of bringing forward facts in connection with this theory induces me to record the following case. A smuggler some months ago covered the whole of his naked body with tobacco-leaves, with a view to defrauding the revenue of the amount of the duty. The tobacco, moistened by perspiration, produced through the skin a real poisoning, which, however, was cured by means of alcoholic stimulants and laudanum. The extreme feebleness of the pulse, its smallness, the cold sweats, the fainting occasioned by the tobacco applied to the whole surface of the body, present numerous analogies with the condition called by Decaisne narcotism of the heart, and which he noticed to disappear entirely or to diminish when the use of tobacco was suspended or diminished. So far as I know, no other case of poisoning by tobacco applied to the skin has been recorded. The treatment successfully employed does not, however, lead to any general conclusions. In ordinary poisoning, the first thing is to eliminate or neutralize the poison. We must then direct attention to the condition produced by it, and this condition depends not only on the nature and quantity of the poison, but on the previous condition of the individual. We cannot thus treat poisoning by the same poison in different individuals in the same manner, because the same morbid causes do not always produce the same consecutive malady. Electric currents, which in other conditions excite hyperæmia and inflammation, only exhaust and use up directly the vital forces when they act with too great violence. I have made a similar observation as to the effect of alcoholic stimulants, which must be combated according to the different symptoms presented by the patients, that is to say, according to the different diseases which are the consequence of their abuse.—*Edinburgh Medical Journal*, Aug. 1864, from *Gazette des Hôpitaux*.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

A Review of some Remarks of Professor Longmore, Deputy-Inspector-General British Army, on the Treatment of Gunshot Wounds of the Chest by Hermetically Sealing. By B. HOWARD, Assistant-Surgeon U. S. A.—In the *American Medical Times*, vol. vii. No. 14, I published a short article with the intention of giving briefly a general idea of the plan of treating gunshot wounds of the chest by hermetically sealing. In that article I preferred using general terms, because I deemed my experience insufficient to authorize my speaking very definitely upon the subject.

At the same time that I wished to avoid hastily giving any positive opinions which I might possibly have to retract, I felt compelled to submit the general plan to the profession, in consequence of its apparent superiority over every other treatment, judging from the remarkable and ultimate recovery of cases which up to that time I had been able to treat by that method until their removal to General Hospital. I was, indeed, not so anxious to have the plan generally adopted, as to induce others to make similar investigations, thinking that the issue in the cases I had so treated might have been rather a happy coincidence than a consequent result.

I observe that exceptions to some parts of this article have been taken by Professor Longmore, Deputy Inspector-General of the British Army, published in the *London Lancet*, Vol. I, No. 1, 1864.¹ These remarks are characterized by distinguished courtesy, and it is in the same spirit I wish to review them.

Prof. Longmore first complains of the absence of limitations in the application of the treatment in the preliminary article referred to. He assumes that, as they were not technically stated, had I expressed my opinions fully enough, I should have recommended its universal application; an assumption inconsistent with the nature of the subject, and contrary to the universal axiom in our profession.

In the so called science of medicine, even in our most settled and approved plans of treatment of any disease, one cannot attempt an enumeration, much less a description of every modifying circumstance which may occur in every case, and give in detail the corresponding modifications of treatment thereby indicated, without being quite voluminous.

Neither will they, being given, be used to any great advantage, for, though the memory of the Surgeon be ever so accurate, nothing can supply the place of a correct judgment, which, as it matures, proceeds upon the fewest and most general rules.

It is this unqualified application of the treatment described, which seems to be the first upon which the controversy chiefly turns, and which Profes-

¹ Remarks on the recently "Proposed American Plan of Treating Gunshot Wounds of the Chest by Hermetically Sealing," by Deputy Inspector General S. Longmore.—*London Lancet*, January 2, 1864.

sor Longmore says, "makes me think it important to notice it; for, if put into practice, *as described*, I feel certain it must lead not only to much disappointment, but occasionally do considerable harm." This is a statement with which all must coincide, applied to any commonly recognized treatment of every disease, and one which I would have fully indorsed at any time respecting the treatment under consideration.

Although Prof. Longmore admits that my meaning "is obvious," he takes exception to the manner in which I used the term "penetrating wound of the chest," and perhaps in a technical point of view, rightly so to a certain extent.

Respecting the value of the terms "penetrating wound of the chest," and "perforating wound of the chest," the perforation is exactly in proportion to the penetration, and the penetration to the perforation. A missile having penetrated into the pleural cavity by passing through the chest-wall, has equally, and no more, perforated the chest-wall, and "vice versa." So, the missile having passed through the lung, has to that same extent, penetrated its structure.

To speak of a wound as a perforating wound of the chest, is, technically, by no means completely distinctive, as it does not declare anything respecting the condition of the lung. It would seem much more correct to adopt the following terms, which I think would be obviously distinctive.

A penetrating wound of the chest is one in which the missile has perforated the chest-wall, and lodged.

A perforating wound of the chest is one in which the missile has entered the pleural cavity, and passed out again.

A penetrating wound of the lung is one in which the missile has pierced the lung without passing out of the chest.

A perforating wound of the lung is one in which the missile has passed through some portion of the lung.

So difficult is it sometimes to tell whether, in a perforating wound of the chest, the lung is involved in the injury, that, for all practical purposes, the terms *penetrating wound of the chest* and *perforating wound of the chest* are sufficiently distinctive.

In a diagnostic point of view they express all that the surgeon will usually care to aver in the majority of cases, and especially so under the disadvantageous circumstances attending practice on the battle-field.

In cases of perforation of the lung without perforation of the corresponding opposite points of the parietes, no surgeon would presume to decide whether the wound of the lung be a penetrating or a perforating one; for it is by no means uncommon to meet with a perforating wound of the lung, with only a penetrating wound of the chest, the ball having lodged in an opposite part of the chest-wall.

The surgeon who has had most experience with gunshot wounds of the chest, will not be the most positive in his diagnosis as to the course of the ball, judging either from the particular symptoms or from the location of the external wounds.

Only a short time since, on making a post-mortem examination of Private L. King, Co. I, 96th N. Y. Vols., I found that from the external wound of entrance below the middle of the left clavicle, the ball had passed over the arch of the pleura, beneath the clavicle, coursing over the spine, downwards and about two inches to the right of it, as far as to the fifth right rib, striking which, it was deflected transversely, re-crossed the spinal column, entering the left pleural cavity, and penetrated the left lung.

Many cases of wound of the lung are at first accompanied with symptoms by no means commensurate with the severity of the case, whereas hemorrhage, haemoptysis, painful breathing and coughing, with consecutive pleuro-pneumonia, may occur without any penetration of the chest whatever, but simply from indirect injury by concussion from a partially spent ball. It being sometimes so difficult to be certain as to the condition of the lung, whenever the symptoms indicate the probability of its being wounded, it is better to proceed as if it were a certainty.

Prof. Longmore, in common with all eminent authors, so far as I know, recommends the immediate closure of all incised and stabbing wounds of the chest, and says, "Not only the relief to the breathing, by rendering more complete inflation of the lungs practicable, which is the immediate effect of this operation in an incised wound of the soft parts of the chest and periphery of the lung, but the arrest of the hemorrhage, if this complication exist; together with the prevention of subsequent extended pleuritis and pleuro-pneumonia, are sought to be obtained by this means."

Now I would inquire what distinctive feature belongs to a gunshot wound of the lung which should prevent a similar relief of dyspnœa as is admitted to follow upon closure of the external wound in the case of an incised or stabbing wound of a similar character?

The admission of air, upon which the dyspnœa mainly depends, is indeed commonly more free in a gunshot than in an incised wound, and therefore demands more careful and immediate closure.

That the conditions and tendencies of the wounds are different, is obvious; that they cannot, in the nature of things, progress in the same manner, is equally plain; but none of the points of difference seem to afford any reasons rendering the admission of air less harmful in the one case than in the other.

It is a *fact* that, by closing a gunshot wound of the chest, dyspnœa, so far as it is dependent upon the presence of air in the pleural cavity, is promptly relieved; that hemorrhage, beyond a certain extent, is controlled; while it tends to the prevention, in part, of "subsequent extended pleuritis and pleuro-pneumonia," in proportion as the air as a cause is thereby excluded.

In speaking of the practice of accurately closing the outer wound in case of hemorrhage from gunshot wound of the lung, Prof. Longmore seems in one place to admit its desirability, and to recommend it as a matter of necessity where there is active hemorrhage. On the same page, however, I find it stated by the author, or quoted and adopted from Baron Larrey (in the absence of quotation-marks I cannot tell which), the following: "If bleeding is going on from its surface, neither the passage of air through the wound in the chest-wall, nor its restraint, can exert influence upon it."

This evident contradiction arose probably from an oversight; let us therefore, leaving that, inquire for a moment into the validity and correctness of the above statement.

When through the track of the ball, in a severely wounded lung, part of the inspired air is continually passing at every inspiration, and thence outward through the open wound, what conditions are thereby supplied favourable to the arrest of hemorrhage? *Cold?* *Rest?* *Pressure?* Evidently neither; although these are each as efficient for the arrest of hemorrhage in a gunshot as in an incised wound, the very opposite conditions are involved in the state above mentioned.

In the first place, the stream of air passing throughout the track of the ball in the lung is not *cold air*, but *warm breath*, fresh from the interior furnace of the lung. The benefit of *temperature* is therefore not secured;

and this, it seems to me, is one fatal objection to a theory based upon the advantages of keeping the external wound open, in order that the cold air may act as a styptic to the wounded vessels, the efficiency of which is set forth by the author of a book entitled "A Manual of Military Surgery, prepared for the Use of the Confederate Army by order of the Surgeon-General."

This outward-bound current of warm air, so long as it continues, effectually prevents *rest* of the parts, and tends either to prevent their formation, or to promote the loosening as fast as formed, of the clots in the track, by which nature attempts to arrest the flow of blood from the numerous vessels opening into it. So long as this condition continues, the blood which has found a means of exit at the external wound is induced to flow on in a steady current from its source.

If, however, the outer wound be closed, the blood poured into the pleural cavity is soon dammed up, and becomes clotted over the mouth of the wound of the lung, shutting the gates of the track. The blood then poured from the mouths of the vessels finding no exit into the pleural cavity, the track of the ball soon becomes distended with an accurately-fitting clot, moulded to the parts, and making steady pressure upon every open mouth of the bleeding vessels. This compels *rest*, and, acting as a tent, renders further flow impossible, except some large bronchus be involved, whence blood may for a time be expectorated. The walls of the track so protected are now in the most favourable condition for healing, the plug acting, to some extent, as a scab does to the parts beneath, when formed over an ordinary flesh wound, and being dislodged as soon as its object is accomplished.

In the case of an incised wound of the periphery of the lung, rest induces apposition of the cut surfaces, which is an additional means of arrest of hemorrhage.

In a gunshot wound, *rest*, for the same purpose, induces the formation of clot in the track, while, at the same time, the presence of the clot contributes to rest, extending as it does into every irregularity of the patulous walls of the lacerated track, exerting steady distension, and maintaining its fimbriated attachments with a good deal of tenacity.

Is it not evident that where the hemorrhage is as profuse as here supposed, that closure of the external wound is not only desirable, but that thereby arrest of the hemorrhage is inevitable?

It is very rarely, however, that the surgeon is called to treat a case of hemorrhage so profuse as that which I have described. In ordinary cases, the torn vessels soon cease to bleed—if very large, from general exhaustion, ending in death; if small, from retraction of their coats in the first place, then, upon the firm obstructing clot formed in the track, the surrounding air-cells freely expand, and thus, from within, a new haemostatic force is introduced.

Is it not evident that, having thus plugged the ruptured air-cells and debarred the entrance of air into the pleural cavity through the external wound, the entire lung may expand more freely, and thus, at the same time, preserve its elasticity, and be prepared, should the opportunity arise, gradually to reoccupy the entire pleural cavity? Respecting closure of the external wound in cases of extreme hemorrhage, the surgeon will sometimes find it necessary to desist from this course, on account of the pressure of the accumulating blood upon the lungs, and its crowding of the heart. In such a case he must endeavour to preserve the balance of life by watching on which side the scale—whether from exhaustion, from loss of blood, or

asphyxia from compression of the vital organs—the downward tendency prevails.

Although the danger from asphyxia may be increased by closure of the external wound, the danger from hemorrhage may be so much *more* diminished, as to reduce greatly the aggregate risk of life; meanwhile, the lung may become increasingly tolerant, and the vital powers be so resuscitated as to improve the prospects of ultimate recovery.

The relief to dyspnoea from access of air through a gunshot wound of the chest is so uniformly secured by its closure as to need no comment. I will, therefore, pass on to consider some of the remarks of Prof. Longmore under the head of suppuration.

Prof. Longmore inquires, if we can expect a diminution or prevention of suppuration by shutting out external air, adding—"This is doubtless the case with incised wounds, but can we expect it to be with penetrating gunshot wounds?"

Is there anything in a gunshot wound not found in an incised wound of the lung which diminishes the suppurative effects promoted by the action of atmospheric air upon it? Does the gunshot wound confer any immunity upon the pleural lining of the cavity wounded, to the continuous action of atmospheric air upon it? If not, why is it not as injurious in a gunshot, as in the case of an incised wound; and therefore its exclusion of as much importance in the former case as in the latter?

The difference between the two cases is undoubtedly this, that in the gunshot wound the injury is of greater gravity, and of a nature rendering the parts peculiarly obnoxious to the deleterious action of atmospheric air, rendering its exclusion therefore so much the more desirable.

In an incised wound of the lung, the pleura and lung are (excepting the wound) in an otherwise healthy condition, the admission of air by compressing the lung, would not prevent apposition of the cut surfaces, but it would have a tendency to excite "general pleuritis and promote pleuro-pneumonia."

But in a gunshot wound of the same parts, we find in addition to this, a varying amount of contused, sphacelating, and dead tissue, besides a greater liability to the presence of foreign bodies, spiculae of bone, pieces of clothing, &c.

The passage of renewed currents of oxygen through the whole track of the ball, and circulating throughout the pleural cavity, induces exaggerated sloughing, and increases the amount of tissue invaded, by the preliminary inflammation it excites in the neighbourhood of the wound.

The whole extent of the pleura being suddenly and continuously subjected to the same irritating cause, it becomes thickened and softened throughout, breaking down readily under the touch; the pus and blood in the cavity also become extremely fetid from the same cause, and a chemical is superadded to a mechanical irritant; this exerts an influence immediately depressing to the vital powers, the degree of which is proportioned to the frequency, rather than the volume, of the repeated currents of oxygen to which the parts have been exposed.

Is it not evident that the longer we can exclude these currents of air without incurring any greater danger from compression, we delay, in the same degree, the legitimate effects of their presence.

The known existence of certain causes of irritation and suppuration, such as spiculae of bone, pieces of clothing, &c., which may have been carried into the pleural cavity, are only additional reasons for limiting the

amount of every other cause of irritation and suppuration as much as possible, and delaying that amount of it which may be unavoidable, to as late a period as practicable, in order that in the meantime, the constitutional powers may be rallied for the coming conflict.

It is strange Prof. Longmore should have devoted so much space to the condemnation of a hypothesis of his own construction, viz: that of allowing no means of exit for the pent-up discharges. The attributing such an idea to me must have resulted from a great oversight, as in the article referred to appears the following, in a distinct and separate paragraph.

"Should suppuration occur so as to occasion distressing dyspnoea, proceed to treat it in all respects as a case of empyema, introducing the trocar at the most dependent point, and taking special care to avoid the admission of air."

The entire plan of treatment I have ever based upon these two main points, exclusion of atmospheric air, and removal of collecting fluids, &c., principles which, I think, are fully in accordance with the inductions of science. The great trouble has ever been in the difficulty of carrying them out in practice; and it is this that I have laboured in some measure to overcome. Should I fail in my immediate object, I still have hope that my endeavours may conduce to such modifications in treatment as shall minister to the benefit of the patient, and help by exclusion to diminish the area of doubt and uncertainty surrounding the treatment of this class of cases and save future trouble to some one similarly impressed of repeating the same attempts.

As to the operation which I described in the article referred to being "*new*," that is a matter of very little concern. Although, however, Prof. Longmore has chosen to contest that point which indeed I did not then claim; he has not shown that it was ever performed or proposed before, or that any attempt had previously been made by such means to obtain healing of a gunshot wound by first intention.

It is my intention to enter into further particulars, and give definitely my views on this subject as soon as convenient: I think they will appear to be in harmony with established principles, although involving modifications in their application.

The exclusion of all foreign bodies from the pleural cavity: accumulating fluids, no less than atmospheric air. This, as far as practicable, is my aim. The common fault in practice has been an undue attempt to accomplish the former by inadequate means to the improper neglect of the latter. Whereas, both should be together attempted with such modifications as each particular case may demand, in order to counteract the most evident tendency to death from either cause respectively.

Progress is not consistent with haste in scientific investigations. I content myself therefore for the present with endeavouring to correct certain important misapprehensions which have evidently prevailed.

HEAD QUARTERS ARMY OF THE POTOMAC,
CAMP NEAR PETERSBURG, VA., Sept. 6, 1864.

Gunshot Wound of the Subclavian Artery. Reported by ASA ALONZO SMITH, M. D., Acting Assistant Surgeon, U. S. A.

Private Levi Reylea, Co. D. 16th Pennsylvania Cavalry, aged 25, was admitted from City Point, Virginia, into the Satterlee U. S. General Military Hospital, Dr. J. J. Hayes, Surgeon U. S. V., in charge, August 20th, 1864. He was wounded August 16th, 1864, at the battle near

Malvern Hill, Virginia, by a Minié ball, that entered in front of the right clavicle, about one inch from the sternum, and remained in the body. A large amount of blood, according to his own statement, was lost at the time of the receipt of the wound.

When he entered the hospital the man's general health was good. His appearance showed that he had lost recently a large quantity of blood. In the right clavicular region, about one inch from the sternum, was a hole through which the finger passed under the clavicle, which bone was broken, backwards and outwards, over the upper side of the first rib, which bore a small rough spot. A great many very small pieces of bone were felt firmly fixed in the tissues around the track of the ball. In the right arm there was no pulse to be felt in any of the arteries; motion and sensation were abolished, though the man complained frequently of sharp pains shooting down the limb as far as to the ends of the fingers. Behind, the right scapular region was swollen and hard, something very like a ball being felt in the portion below the spine of the scapula. Auscultation and percussion showed the thoracic cavity to be untouched.

The man was kept in bed, water dressings being applied to the external wound, and directions given as to the use of compression in case hemorrhage should occur.

On September 1st several small pieces of bone, now perfectly loose, were removed; the largest about the size of a pea.

On the 7th, at 7.30 P. M., the man being quiet and lying on his back, there was a profuse hemorrhage from the wound, some 15 or 20 ounces of blood being lost in a few minutes. It was arrested by the nurse, by pressure with a narrow rolled bandage, as had been directed.

A consultation of the medical officers at the time in the hospital was called, and it was decided to keep up the pressure in the wound until the next day; the acting medical cadets were detailed to perform this duty, relieving one another hourly. The patient, although exceedingly weak, rested quite well through the night; brandy was freely administered; no blood was lost.

On the 8th, at 11.30, a consultation was again held, at which Dr. Walter F. Atlee, Consulting Surgeon to the Hospital, was present, and it was decided to place a ligature at once around the subclavian artery, between the wound and the heart, and after that to act as circumstances might indicate. The usual incisions were made for this purpose, but no artery could be found in the place usually occupied by the subclavian. On sliding the finger down the scalenus muscle against the first rib it perceived an organ irregularly rounded, but not hollowed and not pulsating, and attached quite firmly to the parts around. With difficulty, and after much consultation as to what should be done, a thread was passed around this organ, it was left for a few moments, and then removed without having been tied. After long hesitation it was determined to place a ligature around a vessel, most probably the superior scapular, beating in the upper part of the incision, and running in such a direction that it might open into the wound. This was the only pulsating vessel anywhere to be felt, on exploring both the wound and the incisions made, by the finger. There was no hemorrhage during the operation, although, of course, there was no compression made between the heart and the wound. One small vessel that sponted in the subcutaneous cellular tissue after the first incision was tied immediately. During the operation the patient was kept more or less under the influence of chloro-

form, mixed with ether; one part of the former to three, by measure, of the latter.¹

The patient was then left in this condition; cadets being detailed as before to watch over him.

An hour after the operation there was considerable reaction; the general expression was good; the body much warmer; the pulse 98; in the afternoon the pulse was at 95, with more volume and more strength.

At 5.15 P. M. the hemorrhage recurred, and before proper compression could be exercised, a large amount of blood was lost. After this the pulse was scarcely perceptible; the face was bleached and covered by heavy drops of sweat; the extremities cold; thirst intense; and the patient very restless. He continued in this condition, the mind remaining clear until the following morning at 5 o'clock, when, without any further loss of blood, he began to sink rapidly, and died at 8 o'clock.

At the autopsy, the clavicle was found splintered; the first rib slightly touched just outside of its tubercle, and the scapula perforated one inch below the middle of its spine. The subclavian artery has been lacerated by the passage of the ball as it crosses the first rib; it was here entirely plugged up for a space of two inches, and looked like a sloughing mass, having a number of very small pieces of bone scattered through it. The hemorrhage had come from the vessel within the scaleni muscles, where an opening was found through the coats of the vessel, the product of ulceration. The subclavian vein had been torn away by the ball. The cavity of the chest and its contents were perfectly healthy.

Hydrops anterior of Both Eyes. By PHILIP S. WALES, M. D., Surg. U. S. N.—A man was admitted, Jan. 3d, 1863, into the Portsmouth, Va., Hospital, who two months previously had received a severe blow across the eyes by a piece of wood. Conjunctivitis resulted, which resisted all treatment for a long time, but when he came in there was no inflammatory action going on in the eyes, and only two enlarged vessels crossed the sclerotica of the left eye, passing upon the cornea; sight was entirely gone in this eye, and greatly impaired in the right. Both corneas were perfectly transparent, except a small opacity the size of a split BB shot on the left, out of the axis of vision. The anterior chambers were greatly increased in size in all directions, from their gradual and equal expansion. The irides floated loosely in the aqueous humours and trembled visibly upon any movement of the eyes, giving them a very peculiar appearance. Their diameters were also much increased. There was deep-seated and constant pain in both eyes, increased by pressure, the globes feeling hard like solid bodies. The light was rather agreeable to the eyes than otherwise.

The method of treatment pursued was as follows: With a cataract needle I punctured the cornea, two lines from the iris, discharging a small quantity of the humour sufficient to remove all pressure from that membrane,

¹ The observations made by Dr. M. J. Grier, A. A. Surgeon, who administered the anaesthetic, are of interest. "At the commencement, pulse 112, irritable, quick, and feeble; rapidly rose to 130, and became thready and almost imperceptible; removing the anaesthetic it soon regained its former condition. Sometimes, when the administration was prolonged, the pulse reached 160, always falling below 115 within a few seconds on the free admission of atmospheric air. The patient was *very* susceptible to its influence, and was *very* easily controlled by an occasional application of the sponge. Towards the close of the operation it was deemed advisable to give brandy, under which the pulse changed from 115 to 100, gaining in strength and volume. The patient was covered with cold sweat."

which permitted it to subside slightly. By this simple operation all pain was immediately removed, showing that it depended upon the ocular distension. A course of tonic medicines was prescribed, and at the end of 48 hours after the operation, gentle compression upon both eyes with a light, suitable bandage. The relief was prompt, but in three or four days the fluid again accumulated with a return of pain; three operations were done, with the same results, when at the fourth recurrence the patient was urgent for something to be undertaken for his permanent benefit. Extirpation or evacuation of the humours suggested itself as a radical cure, and having them always at my command as a dernier resort, I conceived the idea of injecting the anterior chamber with nitrate of silver, in order to alter the vital activity of its secretory membrane and bring about a healthier tone in the vessels. I made choice of a sol. nitrate silver, gr. ij to the ounce of water, although aware that there must be chemical change from the amount of chloride of sodium contained in the aqueous humour, about 1.15 per cent. estimated along with the aleoholic extractive matter, according to Berzelius.

I first made an opening into the inferior segment of the left cornea with Beer's knife, and, with a small hypodermic syringe, threw in the injection, perhaps half of the aqueous humour having previously escaped. As expected, floeculi of the chloride of silver filled the anterior chamber, and presented a grayish or foggy appearance. The eye was immediately closed, and cold water applied. In an hour I was sent for to see the patient, who complained of excruciating pains in the eye, was vomiting, with a cold, clammy perspiration standing upon the whole surface; pulse about 50. Applied twelve wet cups to temple and gave morphia, gr. i, immediately. Pains continued until bed-time, when the morphia was repeated and he soon fell asleep. Next morning was almost free from pain. Continued the cold water, and applied six wet cups. Night—slept without opiate. Morning—free from pain. Continued cold water.

I did not open the eye until the sixth day, when I found all haziness of anterior chamber had disappeared. There was a little cloudiness of the cornea, the incision having healed, while a visible shrinking of this membrane had taken place. No iritis.

The object of the operation, relief of pain, was obtained, and the eyeball conserved and in such good condition that one had to look closely at it to detect imperfection—certainly preferable to extirpation and a glass eye.

This man, about two months afterwards, passed from under my care, but up to that time he had not been troubled, and he himself stated that since the last operation he had enjoyed a perfect freedom from pain unknown since the injury.

In such a case as the above I would pursue this novel treatment in preference to ruining the organ, and although the eye upon which I had operated was totally blind, can we not hope that many eyes, otherwise hopeless, may not only be saved from the knife, but vision restored to them by injections of solutions of various salts?

Case in which the Uterus was Extruded without being Emptied of its Contents. By E. M. JENKS, M D.—On the 12th day of August, 1863, I was called in consultation with Dr. Tefft, of Sturgis, Mich., to a case of childbirth where the woman had been in labour for four days, having had for a medical attendant during all that time a homœopathist. Upon reaching the house we found the *doctor* there, who wisely informed us before

entering the lying-in room that "the waters had broken some forty hours before," and, to use his own language, "labour was going along all right until the head came outside; but there was *prolapsus of the vagina*, which would not let the head pass any farther. I tried to stretch the vagina over the head, and afterwards put on liniment to soften it, and then tried, but could not get the prolapsed vagina over the head."

The patient, Mrs. S., æt. 23, was in labour in the eighth month of her second pregnancy. Her first labour occurred at full term, being an easy and natural one. Her general health has been good. She was, as might be expected, nearly exhausted by the length of time she had been in labour. I made a vaginal examination, and found the uterus occupying its proper position; the os uteri dilated about one and a half inch in diameter, soft and dilatable; the head was in the first position; the soft parts were dry and quite tender, probably having derived no benefit from the *doctor's* manipulations or liniment. There appeared to be nothing to prevent ready delivery, except the absence of labour pains and the great exhaustion of the patient. Upon auscultating the patient's abdomen I could not discover any signs of foetal life. By the administration of alcoholic stimulants and ergot her strength was sustained and labour pains were re-established. I then administered chloroform while Dr. Teft attended to the delivery of the foetus. I made no further examination until Dr. T. remarked "that the head had passed the soft parts, but that there was something unusual." Upon examining I could distinctly feel the head and shoulders external to the body, yet surrounded with something, I could not at first tell what. Ocular examination revealed the fact that the head and shoulders were protruded, but *still surrounded by the uterine covering*: the os uteri was dilated no more than at the first examination; the foetal head could be distinctly seen; the powerful propelling force of the abdominal muscles was pushing the gravid uterus still further into the world. Yet what added greater gravity to the case was that at this time I could distinctly see the overstrained uterus beginning to tear at the anterior edge of the os uteri. Fearing a rupture of the uterus I immediately encircled the foetal head with my hands to prevent any further propulsion of the gravid uterus, and if possible uterine rupture, and directed Dr. Teft to reduce the head by craniotomy, which he immediately did, and by means of the crotchet easily delivered the child through the circle made by my hands. Not until the afterbirth was removed by the hand was the uterus returned to the pelvic cavity. I then kneaded the abdomen and felt the uterus contract to the usual size after childbirth. There was no excessive hemorrhage, and no further unpleasant symptom. Convalescence was early established, and the patient recovered her full quota of health and strength.

Upon inquiring into the history of this case I learned that at different times during her pregnancy the uterus had been prolapsed, and that at one time she had bruised this dependent tumour, an abscess followed which suppurated and discharged for weeks and then healed. As the result of this injury the fibrous inelastic bands of the cicatrix prevented the expansibility of the os uteri sufficiently for the birth of the child.

I have been unable to find, in the limited number of obstetric works I have examined, any case of midwifery recorded, presenting the peculiarities of the one I here report. Prof. Isaac E. Taylor, of New York, told me that a similar case occurred in the lying-in wards of Bellevue Hospital. Prof. Timothy Childs, of New York, also informed me that he had known of a case somewhat similar. I did not learn the particulars of either of

the cases mentioned by Profs. Taylor or Childs; yet my impression has been that the similarity of both the cases mentioned by them to this one consisted simply in a less degree of prolapsus, there not being present that great amount of prolapsus which existed in the case, or a non-dilatable os uteri, or rather dilatable only to a certain extent.

It has long been taught that the effect of ergot internally administered is simply to increase the parturient action of the uterus. In this case the re-establishment of the labour pains was undoubtedly due to the ergot administered; yet it does not seem reasonable to suppose that the uterine contractions alone would expel the uterus six inches or more beyond the vulva.

DETROIT, August, 1864.

DOMESTIC SUMMARY.

Imperforate Anus and Malformation of Rectum.—Dr. J. MASON WARREN relates (*Boston Med. and Surg. Journ.*, July 14, 1864) the following cases of imperforate anus, with malformation of the rectum, which are interesting in connection with the question of attempting relief by a surgical operation.

CASE I. *Imperforate Anus with Abnormal Opening of the Rectum Externally.*—A female child, now $2\frac{1}{2}$ years old, was born with a small fistulous opening directly behind the vagina, and half an inch in front of the normal position of the anus, through which the fecal matter was discharged very slowly and with much difficulty. The child was therefore brought to the hospital, where the opening was enlarged by one of the surgeons, who enjoined it upon the parents to keep it from closing up again by the daily employment of tents. In spite, however, of the moderate amount of attention which was given it, the aperture became gradually contracted so as to cause much distress whenever the bowels were evacuated, and to lead the parents to bring the child again for operation, in the spring of 1863, when it was about two years old. The operation was performed by passing a curved instrument into the fistulous opening, turning it backwards, and pressing the intestine down upon its point where the sphincter ani muscle should naturally be situated. Here a dissection was made until the sound was exposed, and the intestine freely opened by a crucial incision. The intestine was now attached by two or three points of suture to the skin, and a tent passed well into the opening. The child bore the operation well. After a few days the tent was removed, and the daily use of bougies, gradually increasing in size was commenced. By the end of the third week it became difficult to introduce the bougie, owing to the very powerful resistance offered by the sphincter muscle; this, however, always yielded to pressure, and the removal of the bougie was followed by a free discharge of fecal matter. At the end of a month the child left the hospital, the mother being requested to bring her twice a week in order to have the bougie passed and the abnormal opening cauterized for the purpose of closing it. Three months afterwards the case was lost sight of, a small fistulous opening still remaining, through which there was occasionally a slight discharge; the new anus performed its functions perfectly.

CASE II. *Imperforate Anus, with Rectum opening into the Vagina.*—In June, 1863, a fine, healthy girl, six weeks old, was brought to me, with the rectum terminating in the vagina. An incision had been made by the attending physician at the point where the anus would be naturally situated, but he had not succeeded in establishing the passage. On account of the very early age of the child, and the small size of the organs, it was very difficult to determine the exact condition of the parts. The mother said that the child was perfectly well, except that the discharges took place through the vagina. A probe passed into the vagina entered about two inches: in front of this another probe could be passed into the urethra, these two passages being entirely distinct. After considerable

manipulation it was found that the whole posterior wall of the vagina, and the corresponding anterior wall of the rectum, were wanting. The operation for the restoration of the natural passages was done as follows: A large silver hook with a ball at the end, was passed into the vagina and forced down against the spot at which it was proposed to make the new opening. Here it could be indistinctly felt through the thick mass of the soft parts which intervened. A crucial incision was made through the skin, and the soft parts dissected to either side until the silver ball, pressing down the intestine, was felt in the wound, the wall of the intestine only intervening. A small aperture was now made in the gut and the hook passed through, so as to hold the parts in position. The aperture in the intestine was now enlarged and its margins stitched to the integuments by four sutures. A plug was then introduced into the opening to the depth of an inch and a half or two inches. After the operation a free discharge took place from the vagina, showing that the plug would not interfere with the passage of the feces while the new anus was being established.

This case has been under observation until the present time (now nearly a year). A large and well-formed canal has been established in the normal position, through which well-formed solid discharges take place from time to time, while the more liquid feces still make their way through the vagina. The child is still too young, and the vagina at present too inaccessible for any attempt to be made to close the abnormal passage; this it is proposed to do at a later period. Meanwhile the child enjoys perfect health.

CASE III. *Imperforate Rectum*.—April 9, 1864. A very small child three days old, which had not yet nursed, was brought to me with the rectum imperforate about three-quarters of an inch above the anus. The abdomen was distended almost to bursting. The child quiescent. A finger being introduced into the anus, encountered the obstruction, but there appeared to be no rounding out of the septum, indicating the continuance of the canal above. It was, however, decided to make an exploratory puncture with a trocar. On the instrument being thrust in, the meconium began slowly to flow out, until at least half a pint had escaped, when on pressure being made on the abdomen flatus followed. The finger was now passed up above the obstruction so as to freely dilate it. No large cavity or depot of the fluid could be detected. It was advised that the finger should be passed up once or twice a day, which the medical attendant promised to do, and also to report the course of the case.

The child took food immediately after the operation, and for a time seemed relieved. It died, however, the same night, about twelve hours after the operation. On examination, a quantity of blood was found in the abdominal cavity, but no meconium. A fibrous cord about an inch long intervened between the rectum below and the cul-de-sac of the imperforate intestine above. The great distension of the intestine by meconium had forced it down into the pelvis, bringing it in contact with the bottom of the anal cavity. On thrusting in the trocar the intestinal contents freely escaped, but on the withdrawal of the canula the upper portion of intestine retracted, and the aperture in it closed so as to be with difficulty distinguished. The oozing of blood into the abdominal cavity probably took place from the lower aperture. The very unusual state of the parts disclosed by the autopsy showed that no operation could have been of service.

CASE IV. *Imperforate Rectum*.—May 12, 1864. A female child not quite 24 hours old, was lately brought to me with imperforate rectum. The abdomen was quite distended, vagina and anus natural; the little finger could be passed half an inch within the anus, when it was suddenly arrested. When the child strained a sensation was felt of something pressing down on the finger, but it did not convey the impression of a portion of intestine distended with fluid. On passing the little finger of the other hand into the vagina, the uterus could be distinctly felt as in its natural position. The finger could then be passed over the finger in the anus against the spine, but detected no tumour; nor could any appearance of distended intestine be distinguished elsewhere, although the finger could be turned round and felt through the parietes of the abdomen. A probe was passed a little way into the urethra, but did not penetrate the bladder, although urine, thick and apparently semi-purulent, was discharged when the

examination was commenced. It was thought possible, but not probable, that the intestine might communicate with the bladder. Under the circumstances no operation was advised. Dr. D. W. Cheever, who had examined the patient the day before, had already given the same opinion.

This patient lived nine days, taking little or no nourishment, the abdomen becoming gradually more and more distended. On post-mortem examination, the intestine was found to terminate in a cul-de-sac between one and two inches above the imperforate anus; the sigmoid flexure, instead of being in its proper place, was found transposed to the right iliac region, where it lay in contact with the right side of the vagina, from which it could readily have been reached and punctured. A probe was easily passed to the fundus of the uterus, the os and cervix being very large. I was surprised to find with what ease the little finger could be passed without violence to the very bottom of the vagina, a fact which may be of material importance in elucidating some of these very obscure cases.

The specimens, together with that last mentioned, are now in the Warren Anatomical Museum.

Successful Ligation of the Innominate.—Dr. D. L. ROGERS, in a letter to Prof. V. MOTT (*Med. Times and Gaz.*, Aug. 20, 1864), communicates a brief notice of the successful ligation of the innomina by Dr. A. W. SMITH, one of the surgeons of the Charity Hospital, New Orleans.

The subject was a mulatto man, at 33, with a large aneurism. On the 15th of last May, Dr. S. applied a ligature to the arteria innominata and to the right carotid about one inch above its origin. Hemorrhage from the wound recurring, Dr. S., on the 19th of July, ligated the vertebral artery. The patient, it is stated, recovered.

Remarks on the Standard Operations for Cataract, and particularly the Method proposed by Mooren and Jacobson.—Dr. JULIUS HOMBERGER gives (*American Journal of Ophthalmology*, April, 1864) an account of the operations of Mooren and Jacobson for cataract. We have already (see No. of this Journal for January last, p. 261 *et seq.*) so fully described these operations that we need not repeat the remarks of Dr. H.

Dr. H. states that these methods have been so unsuccessful in his hands that he has felt it to be a duty to make this success known. He has formed a more favourable estimate of these operations than we have been led to entertain.

Resection of One Inch of an Imperfectly United Tendo-Achilles and Successful Treatment by Sutures.—Dr. WARREN WEBSTER, Assistant Surgeon A. S. A., records (*American Medical Times*, September, 3, 1864) a case of this. The subject of it was a half-breed Indian, who had ruptured the tendo-achilles in running a foot-race. No regular treatment had been practised. When the patient was seen by Dr. W. "there was an intervening gap between the divided ends, of about an inch in length, where but little plastic matter seemed to have been poured out to fill up the space. The uniting bond was so elongated and weak as to render the limb powerless in progression. I resolved to expose the parts by a free incision, remove the slight connecting medium, pare the retracted extremities, and endeavour to unite them by the introduction of sutures of silk. The operation of bringing the severed ends in contact after the removal of the intervening substance was attended with considerable difficulty. This, however, was accomplished by placing the limb in a thoroughly relaxed position, and inserting two strong ligatures through the ends of the tendon about three lines from the extremities. The parts were thus approximated, and the relaxed position of the limb was maintained by an apparatus consisting of a ring of leather placed around the thigh, above the knee, from which a cord was attached to a loop in the back of a slipper. The gastrocnemii muscles were also surrounded by a firm bandage. This apparatus was used for six weeks, when the patient was allowed to walk about, wearing a high-heeled shoe, for three weeks longer.

"After having tied the ligatures one end of each was cut off, and the others withdrawn, as practised in the ligation of vessels. The incision was then united its entire length (which was about three inches) in the most exact manner pos-

sible. The ligatures were removed on the twenty-fifth day, and during the greater part of that time the wound discharged purulent matter. The fourteenth week after the operation the patient walked with scarcely any lameness, and the tendo-achilles appeared to be perfectly united."

Severe Gunshot Wound; Recovery.—Dr JAS. M. SHARKEY reports (*Boston Medical and Surgical Journal*, September 1, 1864) the following remarkable case:—

Judge A. M. H., æt. 58, a resident of San Francisco, California, received, July 19, 1853, at the hands of Capt. C. M. W. a gunshot wound in the left chest from a rifle, at the distance of fifteen feet; the bullet was supposed to run from thirty to forty to the pound.

"The ball entered the back about one and a half inch from the spine on the left side, striking the upper edge of the eleventh rib and deflecting upwards, striking the lower edge of the tenth rib, thence continuing the line of deflection upwards, passing through the pleura and substance of the lung, and lodging under the skin about half an inch from the left nipple, whence it was removed by a very trifling incision. The points of ingress and egress indicate the deflection and track of the ball. It was apparent, from the symptoms presenting themselves, that the intercostal artery, the pleura at both points posteriorly and anteriorly, and a plexus of the great sympathetic nerve were injured, with complete perforation of the left lung. It was also apparent that the pericardium was touched and bruised, but not penetrated. This remarkable wound did not bring the gentleman to the ground. Deeming himself fatally wounded (with remarkable coolness and self-possession he walked a full block in distance without aid or assistance before he fell, it being dark and no person immediately present), he made what he supposed a dying declaration or statement as to the manner of receiving the injury and the name of the perpetrator. On being removed to his residence, he received such medical assistance as was at command in Stockton. He was confined to his bed about six weeks, after that period was taken out occasionally in a carriage, but in a remarkably feeble state, which continued for a long time, and up to the present he still suffers from the shock to the nervous system, though in other respects he has the appearance of better health than he has enjoyed for a number of years.

"A considerable quantity of blood was discharged into the cavity of the chest, and fully two-thirds of the left lung was rendered useless for a long time, caused by the filling of the cells. The chest also became tympanitic, with effusion in the posterior part. These results have been removed to a considerable extent by absorption.

"Two months after receiving this severe injury, he was seized with a rheumatic affection, connected with slight paralysis in the right arm and hand. This attack, doubtless developed by the nervous shock produced by the wound, as it was the first attack of the kind he experienced, has been uncommonly obstinate. He is still crippled with it, but is completely cured of dyspepsia, with which for a long period preceding the injury he was afflicted. For years he has been very feeble and fragile, weighing about 135 pounds, is of a bilious, nervous temperament, the mental largely predominating over the physical, a victim of dyspepsia for the last thirty years and under almost constant treatment for that disease; withal exhibiting wonderful mental and physical elasticity, often wearing out healthy and able-bodied men in the practice of his profession. He is also possessed of great coolness and firmness of purpose, notwithstanding his temperament. These attributes are necessary to be understood, as they doubtless enter largely into the pathology of his case."

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BOYLSTON MEDICAL PRIZE QUESTIONS.

The Boylston Medical Committee, appointed by the President and Fellows of Harvard University, consists of the following Physicians:—

EDWARD REYNOLDS, M. D. J. B. S. JACKSON, M. D. CHARLES G. PUTNAM, M. D.
JOHN JEFFRIES, M. D. J. MASON WARREN, M. D. MORRILL WYMAN, M. D.
S. D. TOWNSEND, M. D. D. H. STORER, M. D. HENRY J. BIGELOW, M. D.

At the Annual Meeting of the Committee on Wednesday, August 3d, no premium was awarded.

The following are the questions proposed for 1865:—

1. *Recent Advances in Ophthalmic Science.*
2. *Pyemia.*

Dissertations on these subjects must be transmitted, post paid, to Edward Reynolds, M. D., on or before the first Wednesday of April, 1865.

The author of the best dissertation considered worthy of a prize on either of the subjects proposed for 1865, will be entitled to a premium of *ninety dollars*, or a gold medal of that value.

The following questions are proposed for 1866:—

1. *Treatment of Painful Affections of the Nerves following Gunshot Wounds.*
2. *Cerebro-Spinal Meningitis.*

Dissertations on these subjects must be transmitted, post-paid, to Edward Reynolds, M. D., on or before the first Wednesday of April, 1866.

The author of the best dissertation considered worthy of a prize for 1866 will be entitled to a premium of *ninety dollars*, or a gold medal of that value.

Each dissertation must be accompanied by a sealed packet, on which shall be written some device or sentence, and within which shall be inclosed the author's name and residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

The writer of each dissertation is expected to transmit his communication to the Chairman of the Committee, in a legible handwriting, within the time specified.

All unsuccessful dissertations are deposited with the Secretary, from whom they may be obtained, with the sealed packet unopened, if called for within one year after they have been received.

By an order adopted in 1826, the Secretary was directed to publish annually the following votes:—

- 1st. That this Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged.
- 2d. That in case of publication of a successful dissertation, the author to be considered as bound to print the above vote in connection therewith.

J. MASON WARREN,

Secretary.

HARVARD UNIVERSITY.

MASSACHUSETTS MEDICAL COLLEGE.

The annual course of Medical Lectures of Harvard University will commence at the Massachusetts Medical College, in North Grove Street, Boston, on the first Wednesday of November, 1864. The regular course will be as follows:—

Obstetrics and Med. Jurisprudence,	by Professor D. HUMPHREYS STORER, M. D.
Morbid Anatomy,	" " JOHN B. S. JACKSON, M. D.
Clinical Medicine,	{ " " HENRY L. BOWDITCH, M. D., and " Adj. Prof. CALVIN ELLIS, M. D.
Anatomy and Physiology,	" Professor OLIVER W. HOLMES, M. D.
Theory and Practice of Medicine,	" " GEORGE C. SHATTUCK, M. D.
Surgery,	" " HENRY J. BIGELOW, M. D.
Chemistry,	" " JOHN BACON, M. D.
Physiology and Pathology of the Nervous System	" C. E. BROWN-SEQUARD, M. D.
Materia Medica	" EDWARD H. CLARKE, M. D.

Demonstrator, DAVID W. CHEEVER, M. D.

Clinical, Medical, and Surgical Instruction will be given at the Massachusetts General Hospital, with Surgical Operations.

Collateral special medical instruction will also be given at the Hospital and elsewhere by Lectures and otherwise, by Drs. ABBOT and ELLIS.

Abundant material is afforded for the study of Practical Anatomy. The Room devoted to this department is open day and evening, and lighted by gas.

Fees for the Lectures, \$50; Matriculation fee, \$3; Graduation fee, \$20.

Good Board can be obtained at \$4.00 to \$6.00 per week. Boarding places provided on application to the Janitor at the College.

Students are requested, upon coming to Boston, to call upon the Dean.

D. HUMPHREYS STORER, *Dean of the Faculty.*

Oct. 1864. No. 132 Tremont Street, Boston.

MEDICAL COLLEGE OF OHIO.

The forty-third annual session will commence on Tuesday, November 1. The clinical course begins October 15.

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THE GREAT SYSTEM OF MIDWIFERY—Just Issued.

THE

PRINCIPLES AND PRACTICE OF OBSTETRICS.

ILLUSTRATED WITH ONE HUNDRED AND FIFTY-NINE FIGURES FROM ORIGINAL
PHOTOGRAPHS, AND WITH NUMEROUS WOOD-CUTS.

BY HUGH L. HODGE, M. D.,

Emeritus Professor of Obstetrics and Diseases of Women and Children in the
University of Pennsylvania.*In one large and splendidly printed quarto volume of five hundred and fifty double-columned
pages, strongly done up in extra cloth; price \$14.*

FROM THE AUTHOR'S PREFACE.

"Influenced by these motives, the author has, in this volume, endeavored to present not simply his own opinions, but also those of the most distinguished authorities in the profession; so that it may be considered as a digest of the theory and practice of Obstetrics at the present period. In the fulfilment of this design, the plan adopted is exceedingly simple. It consists in detailing the natural history of woman, as far as the important functions of gestation and parturition are involved, and deducing from the facts thus elaborated, those principles which should govern the obstetrician. Much attention has been devoted especially to the natural process of labor, so as to elucidate the *modus operandi* of those powers by which the foetus is expelled, and to detail the varied physical and vital resistances offered to the descent and delivery of the child, in all the presentations and positions which it can possibly assume. This comprehends what is now known as the 'Mechanism of Labor,' which intimates that, although the expulsive powers and many of the resistances made to the process of descent depend on 'vital forces,' yet these all act in perfect harmony with the laws of mechanics. It is the knowledge of this mechanism, in all its minute details, which can alone furnish correct principles for the guidance of the accoucheur. We heartily endorse, therefore, the declaration of M. Baudelocque, that the principles of obstetrics 'are sure, all the operations of which may be carried, in a manner, to a geometrical certainty'; and also to that of M. Velpeau, who affirms that these same principles of obstetrics 'give to the resources it employs a degree of precision which causes it to approach in certainty the mathematical sciences.'

"The study of the mechanism of labor is, however, one of acknowledged difficulty. The best minds of the profession have been exerted for its elucidation, and, although much has been done, we must believe that many deficiencies exist, and that many errors are still sanctioned by high names, which have led to corresponding errors in practice.

"The 'Mechanism of Labor' will be found to occupy considerable space in the ensuing pages, in reference not merely to presentations of the vertex, to which attention has been too exclusively confined, but to all the varieties of presentations and positions to which the foetus is liable. Many may object to these minute details, but the great advantage, and even necessity of accurate information upon every point relating to the delivery of the foetus, will not be questioned by those who have had experience in tedious and difficult labors."

The plan adopted by the author to carry out and illustrate these objects can be estimated from the condensed summary annexed of the Contents and List of Illustrations. That this plan has been elaborated in his most careful and successful manner

HODGE'S OBSTETRICS—Continued.

will be apparent from the subjoined recommendations. The work may therefore be regarded as the fullest practical exposition of the subject accessible to the American physician, indispensable to those who, in the exigencies of practice, must require a work for consultation and reference.

From A. HALL, M.D.

*Prof. of Obstetrics in McGill University, Montreal,
Canada, Aug. 22, 1864.*

I have very carefully perused it, and can extract but one conclusion—that it is, without an exception, the *chef d'œuvre* of obstetric works, entering most fully and minutely into the mechanism of parturition, any other work with which I am acquainted; and thus thoroughly and intimately grounding the student in the elements of this branch of his profession, knowledge, it must largely contribute to his accomplishments as a future accoucheur.

Independently, however, of this highly valuable portion of the work, the remainder is packed with scientific information, the largest proportion of which is of unusual value to the practitioner.

is of essential value to the present work.

In fact, I know of no work of this kind that is of so great value to the student and practitioner of law as has been induced that it will rapidly acquire a place among the best of our collegiate literature. I need hardly say that, if I were entertaining such views, it would give me the greatest pleasure to bring the work I have already before my class.

From H. Kuske et al. / *Mathematics* 2023, **11**, 3030

Prof. of Mathematics in Oberlin and M. U. S. A., Dr. J. C. Abbott, 1873.

I purchased the work because I was so greatly convinced that it would be valuable. So far as publication is concerned, I have long had that Professor Hinselwood's book on the world since the last possible work done in this subject. I am proud of this. And now I am in the Department of Obstetrics.

The work of Dr. Hodge is a most creditable testimony, and one which will stand upon the school which it represents, to the best and soundly filed. It cannot be denied that with American practice no such study as the author has made of it, can be found. The estimate upon him which we have given him is his long experience and actual skill shown in the practice of Obstetrics, and his conscientious truthfulness in the report of his examinations bearing, especially, upon the question whether a woman is fit for the practice of Midwifery. They who shall see him in practice will find the medical student described by Dr. Hodge in the work before us with entire accuracy. Now, as regards this, we say, as we said at the time of his examination after the most careful examination, that he is most amply qualified to teach. He is, in fact, a man of great knowledge, and a teacher of great ability, and, if he continues to study, and to improve his knowledge, he will be a man of great service to the profession.

Dr. Hodges having been engaged for thirty-one years in the teaching of obstetrics, as very justly thinking that the results of his own experience and reflection might be of value to the profession. These he has set forth in a manual entitled "A Manual of Instruction in Obstetrics," which is now in its second edition, and is well calculated to meet the wants of the profession.

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